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A NETWORK PERSPECTIVE OF MULTIPLE SOCIAL EXCHANGE RELATIONSHIPS

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A NETWORK PERSPECTIVE OF MULTIPLE SOCIAL EXCHANGE RELATIONSHIPS

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Members of organizations form relationships with many different people in their organization. Exchange theory provides a basis for analyzing how these organizational relationships function in two different ways. Leader-member exchange (LMX) theory describes how an employee's relationship with his/her leader influences his/her attitudes and behaviors, while coworker exchange theory (CWX) focuses on the attitudes and behaviors that result from relationships between coworkers. Few researchers have investigated how leader-member exchange theory and co-worker exchange theory work together to affect employee level attitudes and behaviors. In this dissertation, I use a social network framework to synthesize and articulate the confluence of leader-member exchange and coworker exchange theories.

Based on a review of the literature on leader-member exchange and coworker exchange, I argue that these co-occurring social exchange processes combine to affect attitudes and behaviors. Using outcome measures of performance and affective commitment, I develop hypotheses testing how employees' social networks of coworkers affect these employees' behaviors and attitudes in the leader-member relationship.

This study uses employees in a large USA-based retail organization. I gather data from multiple sources including the employees and their leaders. Using the computer program UCINET, I calculate social network matrix manipulations. I also use SPSS to calculate regressions to test my hypotheses. This dissertation contributes to our understanding of 1) joint effects of various social exchange relationships in the context of specific leader member relationships and 2) the different aspects of a social network framework that differentially influence organizational outcomes.

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CHAPTER 1: INTRODUCTION

Purpose

Organizational behavioral researchers propose that social exchange in the workplace influences critical employee attitudes and behaviors such as performance and commitment (e.g. Graen, Liden, and Hoel 1982; Sherony and Green 2002). During the social exchange process, employees evaluate the reciprocal relationship between themselves and the other person in the relationship. When the reciprocal relationship seems fair, the employee will have a more positive attitude and display behaviors that benefit the organization; when it seems unfair, the employee will have a less positive attitude and display less organizationally desirable behaviors (e.g. Graen and Scandura 1987; Shore and Shore 1995).

Currently, researchers have studied two major types of social exchange relationships relevant to this study: 1) relationships between leaders and employees, also known as leader-member exchange (LMX), and 2) relationships between coworkers, also known as coworker exchange (CWX). Each type of social exchange tells part of the story of the social relationships that an employee maintains, by offering different insights into how those relationships influence the employee's attitude and behaviors, either positively or negatively.

However, there are three limitations in the literature that this dissertation addresses. First, with the exception of Sherony and Green (2002), little research has integrated LMX research and CWX research. Yet, research into the links between various other types of social exchanges, such as LMX and employee-organization relationships, makes it clear

that exchange relationships in organizations do not occur in a vacuum, rather they occur simultaneously. For instance, Tekleab and Taylor (2003) investigated the employee-organization relationship via psychological contracts and LMX relationships and found that employees who had longer tenure in relationships with their leader had higher levels of agreement on employee obligations, and thus higher job satisfaction and lower turnover intentions than those who had shorter tenure with their leader. Others have investigated how justice affects work outcomes through two different types of social exchanges, employee-organization relationships via perceived organizational support (POS) and LMX (Masterson, Lewis, Goldman, and Taylor 2000; Rupp and Cropanzano 2002). Thus, employee-organization relationships are affected by LMX relationships. Furthermore, Graen and Uhl-bien (1995) argued that relationships with leaders and coworkers affect each other, indicating a need to study LMX and CWX simultaneously. However, LMX and CWX relationships, perhaps the most visible and tangible types of exchange relationships in the workplace, have largely been studied in isolation**.**

When relationships are studied independently under different theories, we may not be able to accurately predict an employee's attitude or behaviors because sometimes those predictions conflict with one another. For example, LMX theory predicts that a strong LMX relationship will lead to low turnover (Graen, Novak, Sommerkamp 1982), high job satisfaction, strong organizational-citizenship behaviors, high performance evaluations and a high frequency of promotions (Graen et al. 1982; Wakabayashi, Graen, Graen, and Graen 1988; Wayne and Ferris 1990). Similarly, CWX theory predicts that strong CWX relationships will lead to strong organizational citizenship behaviors (Deckop, Cirka, and Andersson 2003; Brandes, Dharwadkar, and Wheatley 2004), high employee involvement

(Brandes et al. 2004), high perceived organizational support, low turnover intention, and positive affect (Ferres, Connell, and Travaglione 2004). Suppose that an employee has strong relationships with his/her coworkers but a weak relationship with his/her leader. What types of outcomes are likely to occur, those predicted by CWX or those predicted by LMX? Further, imagine that two employees have weak relationships with their respective leaders, yet one still maintains high performance and positive attitudes while the other has poor performance and negative attitudes. What explains this difference when LMX theory would predict that both employees would have low performance and low affective commitment to the organization?

The second limitation in the literature is that researchers often operationalize social exchange relationships at the dyadic level while ignoring the whole network of an employee's relationships. This method creates an inconsistency between theory and reality because employees maintain many different relationships, all of which influence their behaviors and attitudes. For instance, Sherony and Green (2002) wrote one of the few papers that integrated LMX and CWX. They investigated the relationship between two coworkers relative to their relationship to their leader. They then operationalized the complex set of multiple CWX relationships as a composite score by averaging all CWX ratings to create a single score. Investigating the relationships as a composite may have masked some of the effects. For example, if employee has more than one coworker, which CWX dyad is most influential? If an employee has a strong relationship with coworker A and a weak relationship with coworker B, which CWX is most likely to influence the focal employee's attitude and behaviors? Creating composite variables of these two relationships loses the effect of both relationships. In fact, Sherony and Green (2002)

found null effects for both of these variables on the outcome variables of commitment and satisfaction. However, these findings may be a result of the way in which the variables were operationalized.

Therefore, in order to truly understand the social influences on an employee's behavior and attitudes, we must consider the entire set of all of the employee's CWX relationships as well as the LMX relationship. One way to do this is by using the social network approach, which allows for the consideration of multiple dyadic relationships simultaneously. By using a social network approach to study the entire set of relationships, a researcher can more precisely model and analyze independent and combined effects of dyadic relationships.

The third limitation of the literature is missing or overlooked variables in LMX research. This limitation is illustrated by that fact that results between studies often conflict and are not fully explained by the theory, creating a discrepancy between theory and empirical results. For instance, LMX research has produced conflicting results for the various dependent variables including: 1) employee performance, 2) turnover, and 3) satisfaction.

First, while most LMX research has shown that high quality LMX is positively related to high job performance (Wayne, Shore, and Liden 1997; Schriesheim, Neider, and Scandura 1998), other studies have not found conclusive results for the link between LMX and performance or productivity (Vecchio and Gobdel 1984). Second, Graen et al. (1982) found that the quality of LMX predicted employee turnover. However, Vecchio and Gobdel (1984) directly tested these hypotheses and found that the quality of LMX did not significantly predict employee turnover. Likewise, Vecchio, Griffeth, and Hom (1986)

also found that LMX was not predictive of employee turnover. Third, many studies have shown that high quality LMX led to high levels of job satisfaction (Graen et al. 1982; Vecchio et al. 1986), whereas low quality LMX led to job dissatisfaction (Duchon, Green, and Tabor 1986; Graen and Scandura 1987). However, Liden and Graen (1980) did not find a link between the quality of LMX and job satisfaction.

These conflicting results indicate that sometimes the quality of the LMX influences an employee's performance, turnover, and satisfaction, yet, at other times, it does not, highlighting the possibility that researchers have overlooked a moderating variable. In fact, Vecchio (1985) stated that researchers needed to consider exactly how and when the social relationships between superiors and subordinates influenced the subordinates behaviors and attitudes, a recommendation echoed by Dienesch and Liden (1986), who argued that researchers needed to expand the range of variables that influence LMX and its outcomes.

Many researchers have responded to this call by considering the influence of other variables on LMX relationships, such as the influence on LMX of leader delegation (Schriesheim et al. 1998), subordinate disability (Colella and Varma 2001), the organizational work environment (Klein and Kim 1998), and the role of justice (Murphy et al. 2003). Researchers also have expanded research on social exchanges to consider relationships between employees (Seers 1989; Sherony and Green 2002). However, the literature still lacks a model that predicts the factors that explain when LMX effects are strengthened or weakened and the entire network of relationships may be one such moderator.

This dissertation expands the range of variables that influence the LMX relationship and outcomes. It investigates the joint effect of the network of CWX relationship and LMX relationships on performance and commitment. I chose to investigate coworker exchange relationships jointly with LMX for three reasons. First, the norm of reciprocity that is so important to social exchange relationships is likely to be the strongest between coworkers due to the absence of formal authority hierarchy among coworkers (Gouldner 1960). Thus, the types and structures of coworker relationships may in some situations strengthen or weaken the effects of LMX relationships when employees feel obligation to their coworkers.

Second, because of the lack of formal authority, coworkers see themselves as being in the same situation and help each other face challenges and interpret the work environment (Van Manaan and Schein 1979) and share information (Morrison 2002). In fact, researchers have argued that coworkers provide the social information that helps an employee interpret organizational events and conditions, rationalize past activities, and evaluate his/her own attitudes (Salancik and Pfeffer 1978; Louis 1980). Thus, some types of coworker relationships may alter the effects of LMX relationships by providing additional information and by offering support.

Third, coworkers offer help and support that ameliorates the negative effects of unmet expectations (Major, Kozlowski, Chao, and Gardner 1995). These unmet expectations may come from a weak LMX relationship. In other words, the employee may use his/her CWX relationships to cope with or make sense of his/her LMX relationship or organization. So, in some situations CWX relationships may have a strong influence on the LMX relationship and ultimately outcomes.

Therefore, this dissertation posits that when CWX relationships maintain strong norms of reciprocity, help with interpretation of the environment, and offer social support they can further influence the effects of LMX relationships. Thus, the research question in this dissertation is: *How do multiple relationships with coworkers and the primary leader relationship jointly influence organizationally relevant behaviors and attitudes?*

In weak social exchange relationships, one party makes a contribution to the relationship with an expectation of a future return, which is not repaid, resulting in negative outcomes (Blau 1964). If an employee has a weak LMX relationship, Major et al. (1995) argue that the help offered from coworkers in high quality CWX relationships may help attenuate or reduce those negative effects. Furthermore, very strong CWX relationships may actually compensate or reverse some of the negative effects of weak LMX relationships. However, if LMX is strong, then strong CWX may accentuate LMX positive effects because of the added social support offered by coworkers. If CWX relationships are weak, the focal employee will not have the social support needed to make sense of his/her work environment and LMX relationship. This lack of support may further accentuate negative effects of weak LMX relationships and attenuate the positive effects of strong LMX relationships.

In this dissertation, I draw upon and build on the literature from social network theory in order to study the relationships between LMX and CWX. A social network is defined as a specific type of relation linking a defined set of people, objects or events (Mitchell 1969), or a set of actors and the set of ties representing some relationship – or lack of relationship – between actors (Brass, Butterfield, and Skaggs 1998). Social network analysis focuses on patterns of these relationships (Brass 1995). Therefore, it is a useful

framework for this dissertation because employees may have many coworker relationships, which may combine in different patterns to influence the LMX relationship.

The basic assumption of social network theory is that organizational actors are embedded within a network of relationships (Granovetter 1985; Wellman and Berkowitz 1988; Nohria and Eccles 1993; Wasserman and Fraust 1994; Wasserman and Galaskiewicz 1994). Social network research primarily investigates two aspects of ties and relationships: 1) the nature of ties or relationships, and 2) the structure of the network as a whole. Another basic assumption is that the structure of social relationships represents a more powerful source of explanation of employee attitudes and behaviors than the members' personal attributes (Brass 1995; Morrison 2002). Social network researchers argue that we cannot understand organizational outcomes by only considering the presence of social relationships; we must also consider the pattern of those relationships among people (Brass 1995). Thus, social network theory provides a useful framework for examining the influence of multiple coworker relationships on the effects of LMX and outcomes. The next section considers the contribution that is made by this research and specifically how it addresses existing gaps in the literature.

Contribution

The proposed research contributes to academic theory and business practices in several ways. First, researchers have suggested using social network theory to better understand social exchange relationships. A number of theorists have argued that social network analysis can be used to understand meaningful sets of social interactions and relationships rather than focusing on isolated exchanges (Krackhardt 1990; Sparrow and

Liden 1997). This dissertation responds to this call by developing and testing a theory to predict the circumstances under which CWX relationships may compensate or accentuate LMX relationships. In the chapters that follow, this dissertation develops a theory and asserts that the network of CWX relationships can have a compensatory power when relationships with leaders are poor and an accentuating power when relationships with leaders are strong.

Second, this dissertation contributes to the literature methodologically. I utilize two different measures of the quality of LMX and CWX, one using social exchange measures and the other using strength of ties social network measures. Both measures attempt to capture the quality of the relationship, yet they do this in two different ways and may yield two different quality levels for the same relationship. By measuring quality using the social exchange measure and the social network measure, I can see which measure has more explanatory power when predicting employee level outcomes. Thus, I suggest that future researchers consider using the measure that more accurately captures quality of ties.

Finally, this dissertation has practical application to business practitioners. They will be able to identify how multiple dyadic social exchange relationships work simultaneously to influence behaviors and attitudes. For example, results from this dissertation may show which CWX social network characteristics compensate for a poor LMX relationship, which ones accentuate the positive (and/or negative) LMX relationships, and which ones do not influence LMX relationships. Knowing this, business practitioners and organizations could, through social and team building activities, facilitate the development of optimal CWX networks. More specifically, a manager may be able to

identify employees who have weak relationships with their leaders and then assign them coworker mentors. By doing this, the manager can begin to help building a coworker network for that employee so that he/she can achieve higher performance and higher commitment than he/she would without a coworker network.

Boundary Conditions

Like all research, this study is constrained by certain boundary conditions and limitations. First, this research is limited to organizations that have characteristics that allow for the formation of social networks. For example, employees must have the opportunity to create ties with others and to create a social network within the organization. Furthermore, employees must have the opportunity to form multiple types of social exchange relationships. These conditions would be met in organizations in which there are 1) varying levels of roles and responsibilities, 2) multiple people in similar roles (for coworkers), and 3) enough people to form a network. These boundary conditions are not likely to be present in sole proprietorships in which the owner, leader and employee are all the same person. Also, very young organizations, such as new start-ups, are likely to have ill-defined roles, unclear relationships between employees, and reporting relationships that are in flux, and thus not addressed by this research.

Second, this dissertation makes the assumption that the leader is the primary working relationship for employees. Furthermore, it assumes that the coworker relationships are secondary and can influence the effect of that primary leader relationship on outcomes. This assumption may be true in organizations with defined reporting relationships and a clear hierarchy in which the leader is deeply involved in guiding and

directing subordinates' jobs. For example, in sales departments of organizations the department manager or leader may be deeply involved in motivating, sales assisting, sales tracking, goal setting, etc making them a primary relationship. This assumption may not be true in organizations in which employees do not have a clear leader with whom they work and instead rely more on coworkers. In these types of work environments the leader relationship may influence the extent to which coworker relationships affect outcomes. For example, in academic environments faculty members often rely heavily coworkers for collaboration. Their direct reporting leader is often not involved in their work and thus a secondary work relationship rather than a primary work relationship.

Third this dissertation may be bound to jobs in which information is tacit such as sales jobs. If information is not tacit, but is standardized, such as in production assembly jobs, then information sharing that may occur between coworkers is not likely to be important or influential for performance. If however, information is tacit, then information sharing becomes crucial to employee performance.

Structure of Dissertation

This dissertation proposal is structured into five chapters. Chapter 2 describes the relevant literature on social exchange relationships and social networks. Chapter 3 lays the conceptual groundwork for the hypotheses. Chapter 4 describes the methodology used for designing the study and for testing the hypothesized relationships. Chapter 5 presents expected findings, implications of expected findings, and future directions for research.

CHAPTER 2: LITERATURE REVIEW

When two or more people interact in a work setting they may form social exchange relationships, which are powerful influences on employee behaviors and attitudes. The proliferation of theories and research papers concerning these relationships is a testament to the importance of their study. This dissertation extends research by using a different lens, a social network framework, to investigate the multiple dyadic types of social exchanges simultaneously. My goal is to expand our current thinking and gain an understanding of exactly when or under what circumstances the relationships between superiors and subordinates influence subordinates' behaviors and attitudes. In this chapter I provide a review of the literature on both social exchange theory and social network theory.

Social Exchange

Social exchange theory describes the dynamics of interpersonal relations and social interaction. The relationship entails unspecified, broad and open-ended obligations on the part of two parties toward one another (Blau 1964). Social exchange theory posits that people do not use the same style or set of behaviors uniformly across all relationships, but instead negotiate and develop unique relationships with others through a series of exchanges (Dansereau, Graen, and Haga 1975; Graen and Cashman 1975; Bauer and Green 1996). The quality of exchange relationships is influenced by each party's: 1) perceived contributions to the exchange, 2) loyalty or public support for the other member in the exchange, and 3) positive affect or mutual affection for one another (Dienesch and Liden 1986). All social exchange relationships can be characterized as

high quality or low quality, and they encompass three components: 1) trust, 2) commitment, and 3) respect (Blau 1964).

High quality exchanges are those in which the relationship is mutually beneficial and characterized by the norm of reciprocity (Wayne and Ferris 1990; Konovsky and Pugh 1994). Blau (1964) argued that mutually beneficial social exchange relationships require trust, such that when one party contributes to the exchange relationship, he/she does so with the expectation that the contribution will be reciprocated some time in the future. Over time, as the parties fulfill their mutual obligations, the commitment and trust between them grows (Blau 1964 p. 94). Respect is also conferred to an individual when he/she contributes to the relationship in ways that other party values. Graen and Scandura (1987) argued that equitable or fair exchanges are based on each party believing that the other has something valuable to offer in return for the value that he/she offers to the other party.

Low quality exchanges are those in which one or both parties perceive that the costs of the exchange relationship outweigh the rewards. Under these circumstances, he/she is likely to alter contributions to that relationship in order to re-establish a sense of fairness in the exchange. For example, one party may offer the recipient a benefit, but that benefit is not repaid. At the extreme, a perceived lack of reciprocity, or a loss of trust, respect, or commitment to the other party, induces an individual to end the relationship by eliminating interpersonal interactions and mutual interdependencies.

Social exchange theory provides the theoretical underpinnings for predicting employee attitudes and behavior based on the quality of the exchange between the leader and employee (LMX) (Graen 1976) and/or the quality of the exchange between

coworkers (CWX) (Sherony and Green 2002). I describe these two types of social exchange relationships next.

Leader-Member Exchange Theory (LMX)

LMX is defined as the unique dyadic reciprocal relationship developed or negotiated between a leader and a subordinate (Graen, Orris, and Johnson 1973; Graen 1976; Sparrow and Liden 1997). Dienesch and Liden (1986) suggested that LMX relationships begin when there is initial interaction between the leader and subordinate, and become high or low quality as trust levels develop or fail to develop between the leader and the subordinate (Bauer and Green 1996).

Low quality relationships (low LMX) tend to be purely transactional, limited by the fulfillment of contractual obligations (Graen and Cashman 1975; Liden and Graen 1980), and by low trust, interaction, and support (Graen and Cashman 1975; Liden and Graen 1980). In contrast, high quality LMX relationships are characterized by mutual trust, interaction, support, respect, liking, and a sense of common fate (Duchon et al. 1986; Graen and Scandura 1987; Liden, Wayne, and Stilwell 1993; Graen and Uhl-Bien 1995). According to Blau (1964), these attitudes are essential for maintaining a social exchange relationship, since the two parties must trust that their contribution will be reciprocated.

Prior research has investigated the antecedents of LMX. Some researchers have suggested that similarity and attraction affect LMX. Wayne, Liden, and Sparrow (1994) proposed that due to the similarity-attraction hypothesis (Byrne 1971), a leader and subordinate of the same gender would likely have a higher quality LMX relationship. However, in a longitudinal study Bauer and Green (1996) did not find support for this

hypothesis linking gender and LMX. Instead they suggested that high quality LMX relationships do not develop from simple perceived similarity, but rather LMX relationships develop over time through a trust-building process. Other researchers who studied similarity and attraction found that LMX relationships develop and become high quality when there is perceived personality similarity (Bauer and Green 1996) and attitudinal similarity between leaders and subordinates (Engle and Lord 1997).

Leader liking has also been shown to lead to the development of high quality LMX relationships in laboratory experiments (Wayne and Ferris 1990) and field studies (Wayne and Ferris 1990; Liden et al. 1993). Although leader liking may also correlate to perceived similarities, it also links to such factors as high expectations, delegation, and tenure. Wayne et al. (1997) found that when leaders had higher expectations of the employee, then high-quality LMX relationships emerged. Also, high quality LMX relationships develop when the leader displays trust in the subordinate by delegating more responsibility to the subordinate (Bauer and Green 1996). Finally, Wayne et al. (1997) found that dyad tenure is related to the development of high quality LMX relationships. Thus, the research presented above suggests that LMX relationships develop over time and experience as trust is displayed by the leader and reciprocated through high performance by the employee.

Prior research has also investigated outcomes of LMX. Research shows that high quality LMX may positively relate to important individual and organizational outcomes, including job satisfaction, organizational-citizenship behaviors, performance evaluations, frequency of promotions (Graen et al. 1982; Wakabayashi et al. 1988; Wayne and Ferris 1990), and may negatively relate to turnover (Graen et al. 1982). These findings suggest

that in exchange for what the leader provides (for example, influence and support) employees may reciprocate with behaviors managers and organizations value.

On the other hand, when the LMX relationship breaks down and becomes a low quality exchange, the employee may reciprocate with low performance, low satisfaction (Graen 1982; Wakabayashi et al. 1988; Wayne and Ferris 1990; Schriesheim et al. 1998), and increased social loafing (Murphy et al. 2003). These attitudes and behaviors do not benefit the organization and may ultimately harm organizational performance. However, as stated earlier, the results for the link between LMX and performance, turnover, and satisfaction are mixed and inconsistent (Liden and Graen 1980; Vecchio and Gobdel 1984; Vecchio et al. 1986), suggesting that other variables may influence the effect that the LMX relationship has on employee outcomes.

Coworker Exchange (CWX)

The social exchange research on the relationships between coworkers is less extensive than the research on the relationships between leaders and subordinates. Sherony and Green (2002) based their conceptualization of CWX on Heider's balance theory (Heider 1958), defining CWX relationships as exchanges between coworkers who report to the same supervisor. They posited that the quality of coworkers' exchanges relates to the quality of those same workers' exchanges with their leader or supervisor. Thus, if two coworkers have similar relationships with their leader, either high or low quality, the two coworkers will share a common bond and have a high quality CWX. However, when two workers have different qualities of relationships with their leader, those two workers will likely have a low quality relationship. Sherony and Green (2002) argued that this would occur because two close friends of an individual would themselves

become friends (Sparrow and Liden 1997) and similar individuals tend to form closer relationships than dissimilar individuals (McPherson and Smith-Lovin 1987).

Similar to LMX, high quality CWX relationships involve respect, trust, obligation, and commitment. Employees who have high quality CWX relationships would make contributions to and receive contributions from the relationship, such as: social support, helping (Deckop et al. 2003), feelings of self-worth (Sherif and Sherif 1964), and perhaps information or advice (Blau 1964). Low quality exchanges between coworkers would involve few if any contribution to the relationship.

Research shows that high quality relationships between employees create benefits to the organization such as organizational citizenship behaviors (Anderson and Williams 1996; Deckop et al. 2003), perceived organizational support, commitment (Ferres et al. 2004; Redman and Snape 2005) and job satisfaction (Raabe and Beehr 2003). Conversely, low quality relationships between employees are associated with negative attitudes and increased turnover intention (Ferres et al. 2004). Spangolo (1999) found that interpersonal trust between employees that is found in high quality CWX relationships has positive benefits for sustained competitive advantage in organizations. While the studies presented above do not explicitly measure CWX they are useful for inferring outcomes that result from the relationships between coworkers.

Both LMX and CWX theories make predictions about how individuals will behave in interdependent relationships and how they will react when the processes of exchange break down. However, much of the empirical work in these areas has focused on studying each type of exchange independently. Far less research has attempted to integrate these theories' predictions to gain a more complete understanding of how these

social exchanges affect employee attitude and behaviors. The next section describes social networks as a framework for examining the moderating effects of all CWX relationships on the relationship between LMX and behavioral and attitudinal outcomes.

Social Networks

Social networks are made up of ties that link individuals in relationships (Mitchell 1969). Social exchanges can be conceptualized as dyadic relationships or ties that comprise the network. A social network framework is useful for studying multiple social exchange relationships for three reasons. First, each employee of an organization is by definition embedded in a larger social structure. Social network analysis allows us to investigate relationships that occur simultaneously, in doing so, it provides a more powerful prediction of behavior in organizations than simple formal structure (Krackhardt and Hanson 1993). Second, the social network framework provides a theoretical foundation for understanding how multiple relationships function to differentially affect outcomes. In fact, social network analysts argue that patterns of relationships explain outcomes above and beyond the attributes of individuals or sets of individuals (Wasserman and Fraust 1994) because individual outcomes may be dependent on social structures (Baldwin, Bedell, and Johnson 1997). Finally, the social network framework provides specific measures to study how the structure of relationships affects outcomes such as centrality and density.

An employee's social network is composed of specific formal and informal links, or exchanges with leaders and/or coworkers with whom the employee interacts (Knoke and Kuklinski 1982). When investigating exactly how social networks influence

individuals, researchers have been concerned with two aspects of social networks: 1) the nature of the ties in the network (e.g., (Uzzi 1997), and 2) the structure or configuration of the network (e.g., (Burt 1992). This dissertation integrates both the nature of the ties (strength and status) and the structure of the network (centrality and density) to predict employee attitudes and behaviors.

Nature of Network Ties

The two aspects of the nature of network ties that I investigate are strength of ties and status of ties. The network literature describes the properties of strength of ties: "The strength of a tie is a (probably linear) combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the tie" (Granovetter 1973p. 1361). Krackhardt (1992) further elaborated on tie strength by defining strong relationships as those that involve interaction, affection, and time. Specifically, individuals must interact with one another, feel affection for one another, and have a history of interactions over an extended period of time. When these conditions are met, the strength of the ties between the individuals is much greater. Alternatively, weak social networks, or networks characterized by weak social ties, have infrequent interaction, low emotional intensity, low intimacy, and few reciprocal services (Granovetter 1973; Powell and Smith-Doerr 1994).

Social exchange relationships are the ties reflected in social networks. Recall that high quality exchange relationships are characterized by reciprocal influence, mutual trust, interaction, support, respect and liking, and sense of common fate (Duchon et al. 1986; Graen and Scandura 1987; Liden et al. 1993; Graen and Uhl-Bien 1995), whereas low quality social exchange relationships have a lack of trust, lack of respect and lack of

commitment (Blau 1964). Thus, the social exchange concept of qualities between two individuals is analogous to the social network concept of quality of ties.

A second aspect of the nature of ties is the power of ties. Power has been defined in many ways. Researchers have defined it as the ability to overcome resistance to achieving a desired result (Astley and Sachdeva, 1984; Pfeffer, 1981). Power has also been defined as individual's attributed ability to influence another's beliefs, attitudes and behavior as a function of the social resources that he/she controls (Emerson 1962). There are two primary sources of power, personal sources and structural sources. Personal sources of power are individual characteristics such as experience, seniority, education, professional activity, etc (Ibarra, 1993). Structural sources, which I will focus on in this dissertation, have been further distinguished into three types of structural sources including: formal authority, subunit membership, and network centrality (Astley and Sachdeva, 1984). Formal authority as a structural source of power is hierarchical or legitimate power and discretion over resources (Tushman and Romanelli, 1983). Subunit membership as a structural source of power refers to power derived from membership in subunits that controls resources and that are important to the overall organization (Pfeffer, 1981). Network centrality as a structural source of power refers to an individual's ability to hold a central position in the network and gain access to and control over resources and information (Burt, 1982).

The literature on power makes a distinction between an individual's having a power base, which is a network positional attribute and the enactment or successful use of that power base (Brass, 1992). For an individual to have power they must have information, resources and support (Kanter, 1983; 1988). Kanter argued that some of the

resources may be acquired through an individual's formal position or subunit membership, but most of them must be acquired through an individual's network. Therefore, individuals gain power when they have ties or links to others in power.

Power of ties in a network is appropriate to study when considering social exchange for two reasons. First, the power of a leader cannot be assumed. On the surface it would appear that a leader should have a more power than the focal employee. However, Vecchio (1985) found that results for samples of low-level employees did not support the results for previously established LMX studies. He argued that the relationships in supervisor-subordinate dyads and the outcomes associated with the quality of the relationship may not be as important for low level occupations, perhaps because the leader of a low level employee also has low power relative to others in the organization. So, a low level leader may not have as much power to influence subordinate actions as a leader in a high power position. Second, a coworker may have a high level of power, either formally or informally, possibly more than a leader.

Network Structure

Of the many different elements of network structure that researchers have investigated, such as centrality, density, structural equivalence, multiplexity, cohesion, fragmentation, I focus on network density and centrality. Density and centrality are suitable for this study because 1) they both have positive and negative effects on employees' outcomes, and 2) they both measure network characteristics for individual employees without the constraint of hierarchical level.

Density is a property of an individual's entire network and is defined as "the ratio of number of relationships that exist in the network to the total number of possible ties, if

each member were tied to each other" (Wasserman and Galaskiewicz 1994p. 101). Density is measured as the mean number of ties the employee maintains, so that a higher mean number of ties indicates greater network density (Sparrow, Liden, Wayne, Kraimer 2001). Network density is different from network size in that network size answers the question: On average, how many individuals does any individual reach? On the surface, it seems that a large size, or a large number of ties, would provide the most information. However, Burt (1992) argued that size is a mixed blessing; more contacts can mean more access to information, but only if those contacts are diverse.

Density is important to this study because as networks become more dense surveillance of behavior is high (Brass et al. 1998) and social consensus is high (Jones 1991). Furthermore, when surveillance and social consensus are high coworkers transmit work attitudes in their network and produce homogeneity of beliefs within the network (Carley 1991; Totterdell, Wall, Holman, Diamond, and Epitropaki 2004). Thus, if an employee has a dense network of coworkers they are likely to monitor their behavior and adapt their attitudes to that of coworkers.

Density elicits both negative and positive outcomes for the individual and organization. First, density may negatively impact employee performance. Density reflects the interrelatedness between ties and the overall level of various kinds of interactions reported by network members (Sparrow et al. 2001; Morrison 2002). In dense networks contacts are shared and mutual, thus information is redundant. Burt (1992) showed that dense networks offer limited access to information. Dense networks are the opposite of sparse networks, which are non-redundant and lead to different people and diverse information (Burt 1992). Diverse information that results from sparse

networks has positive benefits to the employee's performance, which is also beneficial to the organization (Campbell, Marsden and Hurlbert 1986), while redundant information from dense networks leads to decreased performance (Rodan and Calunic 2002).

Dense ties can have positive benefits for the individual and organization. For example, density has been linked with task mastery and role clarity (Morrison 2002) social support (Mitchell and Trickett 1980; Ibarra 1995), cooperation, identity, and feelings of belonging (Podolny and Baron 1997), and the ability to cope (Baldwin et al. 1997). These benefits may enhance employees' performance and commitment, variables of interest in this dissertation. Thus, density is important to this study because each individual may maintain a network that is either more or less interrelated than others, and that interrelatedness of exchange relationships should influence employee outcomes.

Centrality reflects the individual's position within his/her network of relationships. It is the extent to which a given individual is connected with others in the network (Sparrow et al. 2001), and it reflects the extent to which interactions are connected among a small number of individuals rather than distributed equally among members. Centrality answers the question: Who reaches the most other individuals? (Salancik 1995) Centrality is often measured as the variance in the number of network ties per employee (Sparrow et al. 2001). When the variance between employees is low, then all employees have similar numbers of ties, and no employee is considered to be more central. If, however, the variance is high, then some employees have proportionally more ties than others have and these employees are considered to be more central (Sparrow et al. 2001).

Centrality is important to this study for three reasons. First, centrality is most appropriately used when communication structure is not solely determined by formal structures and relationships (Rogers and Kincaid 1981; Rice and Aydin 1991). Thus, centrality is very appropriate in this dissertation because I am considering networks of coworkers, which tend to lack a formal structure.

Second, network centrality is also important because it has been linked with employee level outcomes. For example, individuals who are central can exert more influence simply because they are linked with a larger number of others people. They receive information benefits, power, and access to resources (Burt 1992). In fact, social information processing theorists suggest that proximity to others who control resources and information provides situational opportunities (Salancik and Pfeffer 1978). Thus, a position of centrality confers advantages to the central employee, such as promotions (Burt 1992) and improved performance (Baldwin et al. 1997; Sparrow et al. 2001), and reduces disadvantages, such as turnover (Krackhardt and Porter 1986).

Third, centrality is important because it influences employee cognition (Ahuja, Galletta, and Carley 2003). For example, an individual's structural position may determine the individual's interpretation of events, perceptions, and behaviors (Rice and Aydin 1991). Individuals in structurally central positions can benefit from others' experiences and perceptions (Ahuja et al. 2003). Finally communication theory tells us that network ties help communicate social norms and expectations (Rogers and Kincaid 1981), so an individual who is central will be more aware of social norms and expectations and perhaps even help shape them for self benefit.

As central individuals gain influence, interpret events, and gain more social awareness they may receive benefits that help improve performance and commitment even when they have a weak LMX relationship. Thus, centrality helps us to compare influences on the attitude and behaviors of employees who are more central among their coworkers with those of employees who are less central. This is important because if an employee has fewer coworker ties compared to others then they would be less central and would not receive the advantages described above.

Other structural measures such as structural equivalence, multiplexity, asymmetry, cohesion, cliques, and fragmentation do not fit the purpose and characteristics of this dissertation. Ties with structural equivalence are ties that occupy the same position in the social structure that the focal individual occupies (Shah 2000), and are linked to the same third party (Burt 1997). These structural equivalent referents would have the same pattern of relationships, and thus, the same information benefits because the two actors are substitutes for one another (Burt 1987). In this study, I investigate two types of relationships: 1) employee relationships with coworkers who by definition are structural equivalents; and 2) employee relationships with leaders, who by definition are not structural equivalents. By doing this, I essentially control for structural equivalence.

Multiplexity is the degree to which two actors are linked by more than one type of tie, such as friend, business colleague, neighbor, etc. (Burt 1983). Thus, multiplexity is not appropriate for this dissertation because I focus only on individuals who are connected by one type of tie, business/work colleagues.

Asymmetry considers relationships in which the trust and emotional involvement of one person in the relationship is not reciprocated by the other (Carley and Krackhardt 1990). In this dissertation, I investigate the social networks of exchange relationships, which already incorporates balance or imbalance of relationships, i.e. the asymmetry, into the tie strength measure.

Cohesion, cliques, and fragmentation are not central or important in this study because they refer to group-level phenomenon, and this dissertation investigates the relationships and social networks of individuals. These variables may be more appropriate for the study of team-member exchange (TMX), which considers the relationships between an employee and his/her team as a whole (Seers 1989).

Summary

This section summarized the literature on the social exchange relationships between leaders and employees (LMX) and between coworkers (CWX), as well as the literature on social networks. In social exchange relationships, employees engage in mutually reinforcing exchanges that influence employee attitudes, behaviors, and performance. The literature on CWX relationships is less extensive that that of LMX, yet similarly suggests that the quality of relationships impacts employee attitudes and behaviors. However, little work has been done integrating these two streams of research. This is surprising, considering that a single employee maintains many different dyadic social exchange relationships simultaneously. The social network framework provides an informative perspective on social interactions, as well as information above and beyond that offered by any single exchange relationship. In the next chapter I develop a theory

and set of hypotheses that predict exactly how and when the social network of CWX relationships have a moderating influence on the effects of LMX on outcomes.

CHAPTER 3: THEORY AND HYPOTHESES

As mentioned in Chapter 2, there is little theoretical development integrating LMX and CWX relationships. Employees maintain a network of CWX relationships, which may influence the extent to which LMX influences outcomes. In this chapter, I present hypotheses that predict how a social network of CWX relationships moderates the effects of LMX on outcomes. I focus on two outcomes relevant to organizations: 1) performance and 2) commitment.

Performance

Performance refers to task mastery, productivity, or job effectiveness. I first discuss the link between LMX and performance as established by the social exchange literature. I then discuss the role of CWX social networks in influencing the link between LMX and performance.

LMX and Performance

LMX researchers propose that the norm of reciprocity influences employees with high quality LMX relationships to perform better than employees with low quality LMX relationships due to the added support, feedback, resource and opportunities provided to them by their leader (Feldman 1986; Wayne et al. 1997). In fact, most research results confirm this idea that the quality of the LMX relationship is positively associated with high job performance (Liden and Graen 1980; Vecchio and Gobdel 1984; Schriesheim et al. 1998) and high performance ratings (Gerstner and Day 1997; Wayne et al. 1997; Wayne, Shore, Bommer, and Tetrick 2002). However, other researchers have not found

conclusive results for the link between LMX and performance (Vecchio and Gobdel 1984; Duarte, Goodson, and Tabor 1994). One possible variable that may affect this difference of results is the social network of CWX relationships.

Social Network of CWX and Performance

Researchers have shown that coworker relationships influence employee-level work performance (Chen and Klimoski, 2003; Brandes et al., 2004; Krackhardt and Hanson, 1993). In this section, I discuss how the network of CWX relationships moderates the link between LMX and performance through 1) strength of ties, 2) power of ties, 3) density, and 4) centrality. All four of these aspects of social networks influence the extent to which employees obtain information in various ways. Obtaining information is one of the primary ways in which employees can use their social network to achieve higher performance (Hansen 1999; Morrison 2002). Information benefits performance when contacts have reliable, useful information and are willing to share information (Burt 1992). When networks provide useful information they are often referred to as informational networks or advice networks (Sparrow et al, 2001).

Strength of Ties

Each employee may maintain many different coworker relationships (Sherony and Green 2002), some of which may be strong and others weak. In general, strong ties and weak ties in advice networks provide different types of information (Granovetter 1973; Montgomery 1992; Jehn and Shah 1996; Uzzi 1997; Morrison 2002). Strong ties develop when employees work closely with their coworkers and are deeply involved in daily tasks. The information provided by strong ties tends to be complex, tacit and

difficult to explain (Hansen 1999). Hansen (1999) argued that strong ties are more useful for fine-grained information transfer and for a greater depth of information search than weak ties. Morrison (2002) also argued that strong ties provide more narrowly focused and job specific information than weak ties.

Several studies have demonstrated that the information provided by strong ties is important for employee performance. For example, Morrison (2002) found that employees' task mastery was positively related to tie strength. She argued that strong ties are: 1) more approachable for an employee with questions than are weak ties, and 2) strong ties provide more consistent and reliable job relevant information, which is more important for task mastery than the breath and variety of information that weak ties provide. Others too have found a link between strong ties and employee performance. For instance, individuals in friendship groups, or groups with strong ties, performed better than individuals in acquaintance groups on decision-making and motor tasks (Jehn and Shah 1996). These tasks require detailed information like that provided by strong ties. If an employee needs help on a specific task, then he/she is more likely to ask strong-tie coworkers for assistance because they can provide the information necessary for high performance (Deckop et al. 2003). Thus, strong ties influence performance by providing deep-detailed information.

Weak coworker ties exist when employees do not work closely together and have limited interaction. Weak coworker relationships often exist between coworkers who are in different work groups. Yet these weak coworkers relationships are also useful for different kinds of information (Krackhardt and Hanson 1993).

Weak ties positively influence work performance because they provide different information that is equally as essential as the information provided by strong ties. In particular, weak ties provide information that influences performance when coordination with other work areas is required (Krackhardt and Hanson 1993; Brandes et al. 2004).

In fact, weak ties have also been positively linked with high employee performance. Morrison (2002) suggested that when the information needed for high performance is broad and general, weak ties are best. She found that an employee's level of organizational knowledge is negatively related to tie strength, meaning that networks of weak ties provide the most organizational information. Similarly, Hansen (1999) found that a network of predominantly weak ties is advantageous for the performance of projects requiring codified and independent knowledge. He also notes that weak ties are less costly to maintain. In addition, Brandes et al. (2004) posited that weak coworkers ties across work groups may positively influence performance by increasing the employee's sense of obligation to the group or organization as a whole, rather than obligation to individuals as is prevalent in strong social exchange relationships. Thus, weak ties influence performance by providing diverse, general information and a sense of obligation to the organization.

An important question is which type of ties is best for high employee performance, strong ones or weak ones? Research shows a diversity of information allows employees to achieve high performance (Campbell et al. 1986). Thus, for maximum benefits and high performance, employees need both deep-detail information and broad-general information. Morrison (2002) stated that the instrumental value of a network may vary with the type of information that an individual needs and how that

information will be used. Therefore, employees need both strong and weak ties in order to achieve their highest performance. Based on the above arguments, a diverse informational or advice network comprised of both weak and strong coworker ties will have the strongest moderating effect on the relationship between LMX and performance.

In conclusion, there are three different scenarios of the strength of CWX networks 1) diverse CWX ties, 2) primarily strong CWX ties, and 3) primarily weak CWX ties. The following chart shows my hypotheses of how strength of ties moderates the effects of LMX on performance.

H1a – H1c: LMX and Performance Moderated by Strength of CWX Advice Ties

		CWX		
		Strong	Weak	Diverse
LMX	Low Quality	+	+	++
	High quality	++	0	+

Key	
++	Strong positive effect on DV
+	Slight positive effect on DV
0	No effect on DV
-	Slight negative effect on DV
--	Strong negative effect on DV

When LMX relationships are low quality, employees do not receive adequate information to assist them in their jobs, either detailed or broad (Graen and Scandura 1987). However, information provided by advice networks of CWX relationships may moderate the effect of LMX on performance by compensating for the lack of information

in the main relationship. I expect that the degree of the moderating effect of CWX ties will vary according to type of ties. If an employee has primarily only strong CWX ties, those ties will offer the employee deep-detailed task specific information that would not be available from a low quality LMX relationship. However, those strong ties would not provide the broad, general, organizational information. In contrast, employees with primarily only weak ties will receive general, organizational information, but will not receive deep-detailed information that is also necessary for high performance. Thus, both strong and weak CWX ties may improve the level of performance associated with the weak LMX relationship, but may not provide all of the information necessary for the highest levels of performance.

High quality LMX relationships do offer information that leads to high performance (Graen and Scandura 1987). In this paper, I assume that due to their higher position in the organizational hierarchy and their role as agents for the organization, leaders provide employees with information that is tends to be broad, global, and more organizational rather than detailed and job-specific. Given this assumption, the information offered from weak CWX ties may be repetitive of that offered from the leader. In particular, weak CWX ties may offer the same organizational knowledge as that offered from high quality LMX, such that the information offered from these weak CWX ties would not have an effect on performance. However, when employees have very detailed, job-specific questions their strong ties offer the most detailed information. Thus, strong ties should positively influence performance levels when LMX is high by providing information that is different from that offered from high quality LMX relationships.

Diverse ties, on the other hand, offer varied organizationally relevant information and job specific information that may be above and beyond the information offered from even the best LMX relationship. Therefore, I predict that a diversity of CWX ties will have a direct positive influence on performance as well as a positive moderating effect on the relationship between LMX and performance.

H1a: Strong ties in an advice coworker network positively influence performance and strengthen the relationship between LMX and performance.

H1b: Weak ties in an advice coworker network do not change performance levels when LMX is high and increase performance slightly when LMX is low, such that the relationship between LMX and performance is weakened.

H1c: Diverse ties in an advice coworker network positively influence performance when LMX is high, and increase performance by the greatest amount when LMX is low, such that the relationship between LMX and performance is weakened

Power of ties

Recall, power is the ability to overcome resistance to achieving a desired result (Astley and Sachdeva, 1984; Pfeffer, 1981) and an individual's attributed ability to influence another's beliefs, attitudes and behavior as a function of the social resources

that he/she controls (Emerson 1962). The power of CWX ties influences performance of employees in two ways: 1) controlling behavior, and 2) information control.

The first way in which high power ties influence the performance of employees is by using political advantages and social power to controlling behaviors (Ibarra, 1995). High power ties control behavior because lower power employees are motivated to avoid punishment (Ibarra 1995). For example, research shows that employees are less likely to act unethically when they have high power ties because the more powerful individual can retaliate with more force (Brass et al. 1998). Moreover, research implies that employees are motivated to make a positive impression and maintain their higher power ties because they believe they will receive political benefits and rewards. For example, Gordon (1996) found that employees who used impression management behaviors directed at someone in a high power position consistently received enhanced performance evaluations. Thus, when employees have high status ties they are motivated to work hard to achieve high performance in order to receive political benefits and rewards.

The second way in which high power ties influence the performance of the focal employee is by being information sources. High power advice networks are associated with more access to information than low power advice networks (Lin et al. 1981; Ostroff and Kozlowski 1992). Based on Blau's (1962) differentiating effect, which states that different attributes place certain actors in central positions in their network, Lincoln and Miller (1979) argue that high power employees become more central in information networks and low power employees become isolated. Pfeffer (1981) argued that those in power are likely to stay in power and the distribution of power is difficult to change. Thus, information is channeled through high power employees who become a "medium

for communication of information and control" (Lincoln and Miller 1979). Furthermore, Shrum (1990) found that high power employees were more likely than low power employees to provide information when they were central in their network. Morrison (2002) demonstrated the informational benefits of high power ties when she found that employees had better task mastery and role clarity in their job when they had higher power ties because high power ties are better sources of task relevant information than low power ties (Louis 1990; Ostroff and Kozlowski 1992). Macro network research has also suggested the informational benefits of high power ties, finding that prominent network positions reduce market uncertainty by providing access to information and defining status hierarchies (Burt, 1992; Podolny, 2001).

Where high power ties provide a controlling influence and information benefits, low power ties lack control over individuals and lack information that is beneficial for performance. The extent to which the power of ties control behavior and provide information benefits will influence employees' performance. Depending on the quality of the LMX relationship, the power of coworker ties may actually override the LMX relationship. For instance, if the employee believes that their high power coworker has more influence and power in the organization than the leader does, then those CWX ties will have a stronger controlling influence on employee performance than the leader will have. The following chart shows how I expect power to moderate LMX and performance.

H1d: LMX and Performance Moderated by Power of CWX Advice Ties

		CWX	
		High Power	Low Power
LMX	Low Quality	++	0
	High Quality	0	0

Key	
++	Strong positive effect on DV
+	Slight positive effect on DV
0	No effect on DV
-	Slight negative effect on DV
--	Strong negative effect on DV

In low quality LMX relationships, performance can be low because employees do not trust or respect their leader due to previous unmet expectations or perceived lack of rewards (Graen and Cashman 1975; Liden and Graen 1980), thus, the controlling influence of the leader on the employee is low. Therefore, I predict that by offering a controlling influence and informational benefits, high power CWX advice networks may help compensate for the LMX relationship, alleviating a portion of the low performance associated with low quality LMX. I expect that low power CWX ties, on the other hand, will not affect low quality LMX relationships because they do not offer control or information.

High quality LMX relationships impose a norm of reciprocity that controls employee behaviors and leads to high performance (Wayne and Ferris 1990; Konovsky and Pugh 1994). Therefore, I propose that the control and information benefits offered from high power ties will not override or compensate for that offered from the leader

yielding no effect on the relationship between LMX and performance. Furthermore, I expect that low power coworker advice networks will not offer influence or informational benefits and will not influence the more dominant effect of the LMX relationship on performance.

H1d: High power advice networks do not change performance level when LMX is high and increase the performance level when LMX is low, such that the relationship between LMX and performance is weakened.

Density

Recall that density is "the ratio of the number of relationships that exist in the network to the total number of possible ties, if each member were tied to each other" (Wasserman and Galaskiewicz 1994). A dense network is one in which all ties are interrelated and share interaction (Sparrow et al. 2001; Morrison 2002). A sparse network is the opposite of a dense network; it contains many structural holes. Burt (1992) used the term structural holes to identify non-redundant contacts, or two contacts who together are not directly connected even thought both are contacts in the focal employee's social network.

Research posits that diversity of information that comes from sparse advice networks allows employees to achieve high performance (Campbell et al. 1986). In fact, successful managers who have high performance tend to have sparse networks characterized by numerous structural holes (Burt et al. 2000). Dense advice networks, on the other hand, do not offer diverse information. Instead, information spreads quickly

and redundantly to employees in dense networks (Friedkin 1993). Thus, in a dense advice network all contacts receive the same information, and no one person would have a performance advantage over another. The following chart shows my hypotheses of how density moderates LMX and performance.

H1e-H1f: LMX and Performance Moderated by Density of CWX Advice Network

		CWX	
		Sparse	Dense
LMX	Low Quality	++	+
	High Quality	+	0

Key	
++	Strong positive effect on DV
+	Slight positive effect on DV
0	No effect on DV
-	Slight negative effect on DV
--	Strong negative effect on DV

In low quality LMX relationships, employees do not receive the support and information necessary for high performance (Graen and Scandura 1987). However, because sparse networks provide diverse and non-overlapping information to the focal employee, I expect that they are likely to have the greatest compensating influence on low quality LMX and performance. Dense networks, on the other hand, provide redundant information. However, even this redundant information may have a slight performance benefit when an employee has a low quality LMX from whom he/she may

not receive information at all. Thus, I expect dense networks to offer a slight performance benefit when the LMX relationship is low quality.

In high quality LMX relationships, employees do receive support and information from their leader (Graen and Scandura 1987). Therefore, dense coworker network would not offer the employee a performance advantage when LMX is high because all information is redundant. In contrast, if an employee has a high quality LMX relationship and a sparse network, that network may propel the employee to achieve even higher performance due to the diverse information benefits. However, some of the information may be repetitive to that offered by the leader so performance benefits would not be great. Therefore, I expect that sparse network ties will have the greatest influence on the relationship between LMX and performance when LMX is low because all of the information would be useful.

H1e: Sparse CWX advice networks increase performance levels when LMX is high and have the greatest increase in performance levels when LMX is low, such that the relationship between LMX and performance is weakened.

H1f: Dense advice CWX networks do not influence performance levels when LMX is high and increase performance levels slightly when LMX is low such that the relationship between LMX and performance is weakened.

Centrality

Individual network centrality increases when the individual increases the number of his/her ties relative to others. Employees who are central in their network of coworkers maintain more CWX relationships than other employees. The position of centrality in an advice network confers benefits to the central employee including access to individuals, information (Brass 1984; Ibarra 1993), and resources (Ibarra 1993). For example, Baldwin et al. (1997) found that a position of centrality positively impacts performance on a core task by allowing central employees to gain more task-related information than those who are peripheral. Furthermore, others argue that employees who are central in their network exchange assistance and are more involved in mutual problem solving with their coworkers than peripheral employees (Baldwin et al. 1997; Sparrow et al. 2001). This exchange of information in an advice network allows central employees to accumulate knowledge and develop task-relevant expertise that allows for high performance. Conversely, peripheral employees are less likely to gain expertise necessary for high performance. The following chart shows how I expect centrality to moderate LMX and performance.

H1g-H1h: LMX and Performance Moderated by Centrality of CWX Advice Networks

		CWX	
		Central	Peripheral
LMX	Low Quality	++	0
	High Quality	+	0

Key	
++	Strong positive effect on DV
+	Slight positive effect on DV
0	No effect on DV
-	Slight negative effect on DV
--	Strong negative effect on DV

When LMX is low quality, employees do not receive information necessary for high performance. Since central employees maintain more relationships, the effect of any one poor relationship is minimized. Specifically, I expect that the position of centrality can compensate for a low-quality LMX relationship by offering task-relevant information that is beneficial to performance (Baldwin et al. 1997). However, because peripheral employees maintain fewer ties they do not gain as much task relevant information (Sparrow et al. 2001). So, a peripheral position will not likely influence the relationship between LMX and performance.

Recall, high quality LMX relationships are likely to provide general, broad information. The performance of employees who are central in their network will improve as they receive the added benefit of task-relevant information (Baldwin et al.

1997). Thus, if the employee has a high-quality LMX and is also central in his/her network; the position of centrality will likely amplify the positive effects of the strong LMX relationship. However, peripheral positions will not influence the effect of LMX on performance due to the lack of information benefits.

H1g: Central positions in CWX advice networks have a positive main effect on performance levels

H1h: Central positions in CWX advice networks increase performance levels slightly when LMX is high and increase performance levels by the greatest amount when LMX is low, such that the relationship between LMX and performance is weakened.

Summary of Joint effects of LMX and CWX Advice Networks on Performance

			Hypothesized Performance Outcome Effect
CWX	Strength	Strong (H1a)	Amplifies LMX
		Weak (H1b)	Compensatory
		Diverse (H1c)	Compensatory
	Power	Low Power (H1d)	No Effect
		High Power (H1d)	Compensatory
	Density	Sparse (H1e)	Compensatory
		Dense (H1f)	Slight Compensatory
	Centrality	Central (H1g)	Positive main effect
		Central (H1h)	Compensatory
		Peripheral (H1h)	No Effect

Commitment

Commitment is the second organizationally relevant outcome that I investigate. Commitment enhances organizational effectiveness from employees by eliciting higher work effectiveness, lowering turnover, and lowering absences (Mathieu and Zajac 1990). Mowday, Steers, and Porter (1979) defined organizational commitment as identification with organizational goals, willingness to exert effort on behalf of the organization, and interest in remaining with the organization. More recently, the literature divides organizational commitment into three dimensions: affective, continuance, and normative

commitment. Affective organizational commitment is an expression of employees' emotional attachment to, identification with, and involvement in their organization (Meyer and Allen 1991). Employees with a strong sense of affective commitment will remain with the organization because they want to stay. Continuance commitment represents the employees' costs associated with leaving the organization, and normative commitment refers to the bonds that occurs when employees feels that they ought to remain with the organization (Meyer and Allen 1991).

I focus on affective organizational commitment because it represents the employees' psychological link to the organization. The psychological link to the organization is important because when compared to other types of commitment, it has been shown to be related to many job relevant outcomes such as satisfaction (Meyer, Stanley, Herscovitch, and Topolnystsky 2002), job involvement, job performance, and commitment to the accomplishment of organizational goals (Allen and Meyer 1996). Continuance commitment is based on the cost of leaving one's organization which includes the perceived loss of personal investments and limited employment alternative (Meyer and Allen 1991). Thus, continuance commitment is positively and strongly related to turnover and behavioral aspects of commitment rather than the emotional, psychological aspects of commitment represented by affective commitment. Normative commitment entails a sense of obligation to the organization (Meyer and Allen 1991). However, there is debate over its discriminant validity (Ko, Price, and Mueller 1997) and therefore it is not included in this study.

The research shows that there are two primary antecedents of affective commitment. The first antecedent is the quality of the exchange relationship between the

individual and the organization (Eisenberger, Huntington, Hutchinson, and Sowa 1986; Rousseau and Parks 1993; Rhoades and Eisenberger 2002). In the next section, I suggest that this exchange between the employee and the organization is often carried out through the leader or the LMX relationship. The second antecedent is any factor that makes the job enjoyable and involving for the employee and consequently contributes to a positive attitude toward the organization (Mowday, Porter, and Steers 1982; Meyer and Allen 1997). I will suggest that the CWX network can accomplish this by providing a common group identity, social support, and help.

LMX and Commitment

In general, research shows that if employees have strong ties with their leaders, they associate those ties with the organization resulting in strong affective commitment to the organization. Gerstner and Day (1997) found that organizational commitment was highly correlated with LMX. They argued employees base their commitment to their organization largely on the bond that they share with the immediate supervisor or leader. Others have found similar results showing that employees with high quality LMX also have high commitment, and employees with low quality LMX have low commitment (Duchon et al. 1986; Kinicki and Vecchio 1994). Thus, it is clear that the LMX relationship is instrumental in determining employee commitment, perhaps because the leader acts as the agent for the organization (Levinson 1965).

Agency theory is concerned with delegation and organizational control when a principal, in this dissertation an organization, engages an agent, in this dissertation a leader, to perform tasks on behalf of the principal (Fox 1984). Therefore, as the leader,

acting as an organizational agent, carries out tasks on behalf of the organization, employee commitment to the organization can be built or demolished. In fact, Eisenberger et al. (1986) argued that organizational commitment results from a series of social exchange transactions through which the organization demonstrates its intentions to reward increased work efforts and to meet emotional needs. Furthermore, these social exchange transactions with the organization often play out through the employees' leaders, the organizational agent. For example, Wayne et al. (1997) found that the quality of the LMX relationship has a strong effect on perceived organizational support, and perceived organizational support positively influences employee affective commitment. Thus, employees form their general perceptions and attitudes toward the organization based on the way their leaders treat them and enact policies and procedures. In addition, employees form affective organizational commitments, or emotional attachments to the organization via their leaders.

However, researchers argue that the effect of other variables on the relationship between the LMX and commitment may be important. For example, Morrison (2002) argued that employees, who have ties that span multiple levels in the organization, including leaders and coworker ties, will have strong organizational commitment. She suggests that while ties to coworkers do influence commitment, ties to leaders that are imperative in determining commitment. Thus, I expect that employees' LMX ties will be more instrumental in determining affective organizational commitment than CWX ties.

Social Network of CWX and Commitment

Employees' social network of CWX ties influence their commitment is by providing a common group identity and by providing social support which helps employees cope with the stress and strain of the work environment (Nelson 1989; Campion, Medsker, and Higgs 1993; Abraham 1999). These types of networks are often called "expressive" or friendship networks and provide a sense of belonging and identity (Brass 1984; Krackhardt 1992; Podolny and Baron 1997).

Social identity theory is rooted in self concept research which suggests that individuals form a variety of self concepts (Hogg 2003). Primarily, researchers discuss three types or levels of self concepts or identity (Brewer and Gardner, 1996; Sluss and Ashforth, 2007). First, the individualist or "I" self concept occurs when attitudes and behaviors reflect motivation driven by a concern for one's own advantage and well-being (Parsons and Shills 1951; Brewer and Gardner 1996; Lord, Brown, and Freiberg 1999). Personal goals are most important and the criterion for performance is personal success such as pay (Simon and Kampmeier 2001). Achievement and self-worth is derived via one's sense of uniqueness and exceptionality (Simon and Kampmeier 2001). Second, interpersonal relationships identity is derived from the nature of individuals role relationships such as the leader-member relationship or coworker relationships (Sluss and Ashforth, 2007). Third, the collectivist or "we" self concepts occurs when self is defined in terms of group membership (Parsons and Shills 1951). The person with a collective self concept is motivated by group norms and the concerned for the welfare of the group (Tajfel and Turner 1986; Brewer and Gardner 1996).

Social identity theory describes a blending of the individualist, the relational and collectivist self concepts that leads individuals to see themselves as similar to other members of the collective (Turner, Hogg, Oakes, Reicher, and Wetherell 1987). When individuals have a strong social identity they ascribe group-defining characteristics to themselves, internalize group goals and norms, and demonstrate a heightened sensitivity to group-related information (Turner et al. 1987; Brewer and Gardner 1996). They are intrinsically motivated to contribute to the collective (Ashforth and Mael 1989; Dutton, Dukerich, and Harquail 1994). The concept of social identification reflects the extent to which the self is defined in collective terms(Tajfel and Turner 1986).

Research has shown that strong social identity, or collective self-concepts, are related to affective commitment. Meyer and Herscovitch (2001) proposed that a collective identity is a basis for affective commitment. Other researchers have confirmed this proposition. For example, Johnson and Chang (2006) found that the collective self-concept and affective commitment are positively associated because of their shared group-oriented focus and the internalization of group-level goals. Furthermore, Wasti (2003) found that employees' satisfaction with their supervisors predicted their affective commitment if they were categorized as collectivists as opposed to individualists. In other words, the extent to which the individual maintained a group identity moderated the relationship between satisfaction with leaders and affective commitment.

Based on the research presented above, shared social identity may lead to increased affective commitment. Social networks between CWX ties may provide groups that allow individuals to develop shared social identity. For example, research shows that interpersonal attachments in networks shape individuals' attitudes and

behaviors (Friedkin 1993; Friedkin 1998), perhaps including affective commitment. Furthermore, social network structures enables the production of consensus and the coordination of behaviors (Friedkin 2004) which may encourage social support and shared social identity. In fact, Gartrell (1987) showed that network ties are important for developing social identity. So, the question is what type of tie and structure of ties provides social support and shared social identity? I investigate four network aspects: 1) strength of ties, 2) power of ties 3) density, and 4) centrality.[1]

Strength of Ties

The first aspect of social networks that may influence affective commitment is the strength of network ties. Social network research shows that strong ties positively influence employee commitment and weak ties negatively influence employee commitment (Morrison 2002). First, strong ties positively influence commitment by providing a sense of identity and belonging (Podolny and Baron 1997). In fact, research shows that similar people are more likely to communicate frequently and develop ties (Lincoln and Miller 1979; Miller, Lincoln, and Olson 1981; Kram and Isabella 1985; Zenger and Lawrence 1989; Ibarra 1995). Coworker groups provide a basis for similarity and shared experiences. Reagans (2005) argued that when two individuals have a strong relationship they are likely to have characteristics in common to which they both identify. Furthermore, research shows that there is a positive association between collective identification and strong network connections (Hogg and Turner 1985; Hogg and Hardie 1991; Hogg 1993; Zatzick et al. 2003). Therefore, I suggest that strong ties, rather than

[1] Due to the lack of research on status of ties, I will conduct an exploratory analysis of the moderating effect of status of ties on LMS relationships and employee affective commitment.

weak ties, allow for individuals to develop a strong social identity which leads to increased affective commitment.

Second, research shows that strong ties, such as friendship ties, positively influence employees' organizational attachment, which is an element of affective organizational commitment by providing help in obtaining resources and information (Brass 1984; Brass 1985). Weak ties do not provided these benefits. Therefore, I expect that not only will the strength of CWX ties directly and positively influence commitment, but also the strength of CWX ties will be amplified by the extent to which LMX affects commitment. The following chart shows how I expect strength of CWX ties to moderate the effect of LMX on affective commitment.

H2a-H2b: LMX and Affective Commitment Moderated by Strength of CWX Friendship Ties

		CWX	
		Strong	Weak
LMX	Low Quality	++	0
	High Quality	+	0

Key	
++	Strong positive effect on DV
+	Slight positive effect on DV
0	No effect on DV
-	Slight negative effect on DV
--	Strong negative effect on DV

In low quality LMX relationships, employee affective organizational commitment is low (Graen and Scandura 1987; Shore and Shore 1995). If an employee has a network of strong CWX ties, those ties should provide help and shared social identity that will compensate for the low commitment associated with weak LMX relationships. However, because it is seems that weak CWX ties provide no added benefit to increase affective commitment, I expect that a network of weak CWX relationships will not have an effect on the already low affective commitment associated with low quality LMX relationships.

In high quality LMX relationships, employees' affective commitments are high (Graen and Scandura 1987; Shore and Shore 1995). Because organizational commitment is largely tied to commitment to the leader (Duchon et al. 1986; Kinicki and Vecchio 1994), I expect that if employees maintain a network of strong CWX ties, they should receive help and shared social identity from those ties that will at least marginally accentuate the high affective commitment associated with high quality LMX relationship while weak CWX relationships will have no effect.

H2a: Strong CWX relationships in friendship networks have a positive main effect on affective commitment.

H2b: Strong CWX relationships in friendship networks increase the level of affective commitment by the greatest amount when LMX is low and increase the level of affective commitment slightly when LMX is high, such that the relationship between LMX and affective commitment is weakened. Weak ties will have no effect.

Power

Recall that power refers to the ability to overcome resistance to achieving a desired result (Astley and Sachdeva, 1984; Pfeffer, 1981) and individual's attributed ability to influence another's beliefs, attitudes and behavior as a function of the social resources that he/she controls (Emerson 1962). Also, recall that high power ties are those which have access to information, resources, and support. Low power ties lack information, resources and support. Little research has been done examining the link between power ties in networks and commitment. In this dissertation, I propose that power of network ties influences commitment by offering reflective glory.

Employees who have high power ties may have higher affective commitment to the organization because they gain reflective glory from the high power tie. Cialdini, Borden, Thorne, Walker, Freeman, and Sloan (1976) found that individuals attempt to enhance their own public self image by "basking in reflective glory" or attempting to

share in the success of someone else even when they were not involved in the cause of the other's success. In addition, low status employees are promoted in organizations by gaining reflected glory of their high status ties and avoiding contact with low status ties (Allen and Cohen, 1969). In a qualitative study Maertz, Stevents, and Campion (2003) found that in an organizational environment in which turnover was rampant, one of the primary reasons that employees felt affective commitment or attachment to their organization was due to their relationships with someone in a position of power. Furthermore, according to Ashforth and Mael (1989) individuals have strong affective commitment or attachment to their organization when they perceive that the organization is in a position of prestige. This same theory can be applied when and employee maintains coworker ties that are in positions of prestige or power. Thus, employees who have powerful network ties are likely to increase their affective commitment to the organization because of the positive impact on the employee's self esteem and self image. In fact, Kilduff and Krackhardt (1994) found that being perceived to have a high status tie in an organization boosted an individual's reputation as a good performer. Being perceived as a good performer may increase the individual's self esteem and ultimately his/her affective commitment to the organization. These feelings of reflected glory, positive self-esteem and self image may be pronounced in friendship networks where ties provide help and support.

Thus, if employees have high power CWX ties, they will be more committed to maintaining those relationships and ultimately more committed to the organization than employees with low power CWX ties. Therefore, I expect that the power in a network of CWX ties will have a direct effect on affective commitment and will moderate the extent

to which LMX affects affective commitment. The following chart shows my hypotheses of the link between power of CWX ties and affective commitment and the role of the LMX relationship.

H2c – H2d: LMX and Affective Commitment Moderated by Power of CWX Friendship Ties

		CWX	
		Low Power	High Power
LMX	Low Quality	0	+
	High Quality	0	++

Key	
++	Strong positive effect on DV
+	Slight positive effect on DV
0	No effect on DV
-	Slight negative effect on DV
--	Strong negative effect on DV

In low quality LMX relationships, employees' affective commitment is low (Graen and Scandura 1987; Shore and Shore 1995). If employees have low power CWX ties, I expect that those ties will not influence organizational commitment because they do not offer reflective glory. If however, CWX ties have high power I expect that those ties will compensate for low affective commitment by offering reflective glory and self esteem.

In high quality LMX relationships, employee affective commitment is high (Graen and Scandura 1987; Shore and Shore 1995). I expect that if employees have high power CWX relationships, those ties will accentuate the positive effects of the high quality LMX relationship on commitment by offering reflective glory. Furthermore,

because the leader represents the formal authority structural source of power and the high power CWX ties represent the network source of power, together I expect that affective commitment will be accentuate by the greatest amount when LMX is high. However, I do not expect low power ties to have any effect.

H2c: High power CWX friendship networks have a positive main effect on affective commitment.

H2d: High power CWX friendship networks increase the level of affective commitment by the greatest amount when LMX is high and marginally increase affective commitment when LMX is low, such that the relationship between LMX and affective commitment is strengthened.

Density

The second aspect of social networks that may influence affective commitment is the density of network ties. Self-categorization research indicates that a person is more likely to identify with an attribute when a small number of people share it (McGuire and Padawer-Singer 1979; Tafjel and Turner 1979; Turner 1987; Brewer 1991). Consequently, individuals are more likely to identify with a group when the number of members in the group is small. For example, Mehra, Kilduff, and Brass (1998) found that when individuals were minorities or fewer in number in a population or group of people, those individuals maintained stronger, more interconnected network connections. Thus, employees with dense small networks have stronger collective social identification, and therefore higher affective commitment than those with a large sparse network. Thus,

dense CWX networks offer support and social identity that is likely to moderate the relationship between LMX and commitment because a network of CWX relationships has a powerful effect on employee attitudes (Van Manaan and Schein 1979; Seers 1989; Totterdell et al. 2004). In fact, Podolny and Baron (1997) found that dense networks provide strong group social identity and belonging.

Furthermore, recall that dense friendship networks positively influence employee attitudes by providing more social support (Mitchell and Trickett 1980), reduced stress (Kadushin 1982) and anxiety (Totterdell et al. 2004), thus improving organizational commitment. For example, social support is shown to lessen the impact of negative emotions on commitment (Abraham 1999). Consequently, if employees are highly interconnected in a dense network then they will have more social support, more cooperation with coworkers, stronger social identity, and higher commitment to the organization than employees in sparse networks

In sparse friendship networks ties are not interconnected. In fact, a sparse network is defined as one in which the ties to the focal employee are not themselves ties (Burt 1992). Therefore, sparse networks do not allow for the development of shared social identity that occurs in dense networks (Podolny and Baron 1997). Furthermore, sparse ties do not provide the social support that dense networks provide (Mitchell and Trickett 1980). Ensher, Grant-Vallone, and Donaldson (2001) even proposed that when employees do not receive support and do not have a strong group to identify, they receive subtle but consistent cues that they are not accepted in the group and may feel discriminated against. These feelings may actually decrease organizational commitment. Morrison (2002) also argued that sparse networks would not allow for the development

of a strong social identity nor would they offer the support necessary for the employee to have high commitment. Therefore, I expect that the density in a network of CWX ties will moderate the extent to which LMX affects affective commitment. The following chart shows my hypotheses of the link between density of CWX ties and affective commitment and the role of the LMX relationship.

H2e-H2g: LMX and Affective Commitment Moderated by Density of CWX Friendship Networks

		CWX	
		Sparse	Dense
LMX	Low Quality	-	++
	High Quality	0	+

Key	
++	Strong positive effect on DV
+	Slight positive effect on DV
0	No effect on DV
-	Slight negative effect on DV
--	Strong negative effect on DV

In low quality LMX relationships, employees' affective commitment is low (Graen and Scandura 1987; Shore and Shore 1995). However, if employees have dense networks of CWX ties, I expect that those networks will provide enough support and social identity to improve organizational commitment. Furthermore, if employees have sparse CWX networks, they will likely feel alone, isolated, and unsupported. Thus, the negative effects of the low quality LMX on commitment will be accentuated.

In high quality LMX relationships, employee affective commitment is high (Graen and Scandura 1987; Shore and Shore 1995). I expect that if employees have dense CWX relationships, the dense network will accentuate the positive effects of the high quality LMX relationship on commitment by offering additional support. However, I expect that this effect will be marginal because affective commitment is already high.

Finally, although sparse networks may elicit negative feelings for employees I expect that the high affective commitments associated with high quality LMX

relationships will not be changed because organizational commitment is largely tied to commitment to the leader (Duchon et al. 1986; Kinicki and Vecchio 1994).

H2e: Dense CWX friendship networks have a positive main effect on affective commitment.

H2f: Dense CWX friendship networks increase the level of affective commitment by the greatest amount when LMX is low and marginally increase affective commitment when LMX is high, such that the relationship between LMX and affective commitment is weakened.

H2g: Sparse CWX friendship networks reduce the level of affective commitment when LMX is low and does not effect the level affective commitment when LMX is high, such that the relationship between LMX and affective commitment is strengthened.

Centrality

The third aspect of social networks that may influence affective commitment is the position of centrality in network ties. Research suggests that an employee's position in the network shapes social and organizational identification, in addition to dyadic contact, such as the contact between the employee and leader. For example, Andrews, Basler, and Coller (1999) proposed that actors who play a central role in the network will have a stronger social identity than peripheral actors. Recall that strong social identity is

positively associated with affective commitment (Meyer and Herscovitch 2001; Wasti 2003; Johnson and Chang 2006).

Furthermore, employees who are highly central and have a high number of ties proportional to the total number of ties will have more social support, which will help when dealing with the stress and strains of the work environment (Baldwin et al. 1997). Likewise, employees who are central in their social networks have high personal involvement in the organization, understand their personal contributions to the organization, and may be better paid (Goodwin et al. 2004). All of theses factors may increase organizational commitment. If however, employees are peripheral in their network then they will not receive the support and opportunities that central employees receive (Baldwin et al. 1997). Thus, I expect that peripheral employees will more likely have stronger negative emotions and less organizational commitment. The following chart shows how I expect centrality of CWX ties to moderate the effect of LMX on affective commitment.

H2h-H2i LMX and Affective Commitment Moderated by Centrality in CWX Friendship Networks

		CWX	
		Central	Peripheral
LMX	Low Quality	++	-
	High Quality	+	0

Key	
++	Strong positive effect on DV
+	Slight positive effect on DV
0	No effect on DV
-	Slight negative effect on DV
--	Strong negative effect on DV

Employees who are central in their networks should receive support and help needed to achieve high performance. Additionally, they will develop a stronger social identity than employees who are peripheral. Therefore, I expect that positions of centrality will have a positive main effect on affective commitment.

In low quality LMX relationships, employees have low affective commitment to the organization. I expect that central employees will have stronger social identity and receive more social support than peripheral employees. Thus, centrality should compensate for the low affective commitment associated with low quality LMX relationships. Furthermore, I expect that the effects of being peripheral in a network will likely accentuate the low affective commitment associated with low quality LMX.

In high quality LMX relationships, employees have high affective commitment to the organization. The effects of being central in a CWX network will likely accentuate the high affective commitment associated with high quality LMX relationships. However, because affective commitment is already high and organizational commitment is largely tied to commitment to the leader (Duchon et al. 1986; Kinicki and Vecchio 1994), I expect that this effect will be marginal. Furthermore, I expect that the effects of being peripheral in a network of CWX ties not have an effect on the relationship between LMX

and affective commitment. Finally, I expect that these effects will be most evident in friendship networks which rely on social support and identity.

H2h: Central positions in friendship networks will have a positive main effect on affective commitment.

H2i: Central positions in CWX friendship networks increase the level of affective commitment by the greatest amount when LMX is low and marginally increase the level of affective commitment when LMX is high, such that the relationship between LMX and affective commitment is weakened.

H2j: Peripheral positions CWX friendship networks reduce the level of affective commitment by the greatest amount when LMX is low and do not chance the level of affective commitment when LMX is and high, such that the relationship between LMX and affective commitment is strengthened.

Summary of Joint effects of LMX and CWX Friendship Networks on Commitment

			Hypothesized Commitment Outcome Effect
CWX	Strength	Main effect (H2a)	Positive
		Strong (H2b)	Compensatory
		Weak (H2b)	No effect
		Diverse	-
	Power	Main effect (H2c)	Positive
		High Power (H2d)	Additive
		Low Power (H2d)	No effect
	Density	Main Effect (H2e)	Positive
		Dense (H2f)	Compensatory
		Sparse (H2g)	attenuate
	Centrality	Central (H1h)	Positive main effect
		Central (H1i)	Compensatory
		Peripheral (H1j)	attenuate

Summary

This chapter used a social network framework to present a theory and set of hypotheses predicting the moderating effect of the nature and structure of coworker ties on the link between the employee's LMX relationship and particular outcomes. Specifically, I considered employee performance and organizational affective commitment. In the next chapter, I present the methods used to test these hypotheses.

CHAPTER 4: RESEARCH METHODOLOGY

This chapter describes the methodology that I used in the design and execution of this study. Specifically, the chapter discusses the sampling method and data collection procedures, measures, and level of analysis.

Sampling Method and Data Collection

In this dissertation I conducted a field study in a large USA-based retail organization. I chose this organization for three reasons. First, these employees work under defined roles and responsibilities with a primary leader. Second, these employees work in departments and therefore have very defined coworker groups. Third, each individual employee has the opportunity to develop ties to employees in other departments through organizational activities. Thus, each employee is likely to have multiple coworkers and a single direct leader to whom they report.

Data collection used voluntary, paper and pencil surveys given to employees. I individually surveyed each of the focal employees. I asked focal employees to describe their relationships with their leader and their coworkers. Leaders are defined as the persons to whom the employees directly report. Coworkers are defined as employees who report to the same leader (Sherony and Green, 2002). I also asked them to describe their commitment and self report performance. In addition, I used individual sales to gather performance data for each focal employee. Participants filled out the survey by rating each item or by writing in responses to questions.

In order to encourage participation by employees, one week before the survey was conducted the top management leader within the organization (i.e. Store Manager) announced to the department managers that the organization would be conducting a survey. The store manager also announced the survey to all employees at the employee "rally," which is a meeting before the opening of each day. I hand delivered the surveys to each department and personally answered any questions. Furthermore, to encourage participation, I conducted a raffle. For every twenty surveys that were completed a $50.00 gift card was awarded. Employees were given one week to complete the survey. Completed surveys were sealed in envelopes and returned in a locked "ballot box" that was located in the store's customer service department. After the one-week period the collection of surveys ended and data analysis began. This study is cross-sectional, so surveys were administered to individuals at only one point in time.

Before collecting the data, the survey and study was presented to the Institutional Review Board which ensures the protection of human subjects. Approval was granted (IRB #2007020127).

Measures

This section describes the measures that were used to operationalize the variables of interest in this paper. I computed scores by averaging each of the items corresponding to a particular variable. Table 2 summarizes the items and measures for each variable. I report alpha reliabilities of those scales. The scales include independent, dependent and control variables, which are described next.

Independent Variables

This dissertation used two different independent social exchange variables, LMX and CWX. For each of these variables I used two different measures when collecting data, one measure that is commonly used in social exchange research and a second measure that is commonly used in social network research. By doing this, I can was able to determine which type of measure had more explanatory power in employee level outcomes. In a later section, I will show the results using the social exchange measures and separately the social networks variables.

First, I measured LMX using a 7-item, 5-point scale social exchange measure developed by Graen and Uhl-Bien (1995). A high score on the items indicates high LMX quality or strong LMX. Second, I measured CWX using a 6-item, 5-point scale social exchange measure used by Sherony and Green (2002), adapted from the 7-item LMX scale of Graen and Uhl-Bien (1995). Similar to the LMX measure, a high score indicates high quality CWX or strong CWX. The scale Sherony and Green (2002) used had a high alpha rating (alpha=0.92) indicating that the items were reliable. Furthermore, they used principal factor analysis and varimax rotation and found that the CWX factor had no cross loadings with LMX, indicating that respondents could distinguish between CWX and LMX.

However, because social network theory also provides a way to measure the strength or quality of ties, I also measured the strength of both LMX and CWX from a social network perspective. Granovetter's (1973; 1985) original operationalization of tie strength identified strong ties as individuals who interacted at least twice a week and weak ties as individuals who interacted less than twice per week and more than once per

year. More recent research has cautioned against such an operationalization, favoring instead a measure of closeness or affection (Marsen and Campbell 1984).

Therefore, in this dissertation, I operationalized tie strength according to the three elements that Krackhardt (1992) discussed as being critical: (1) interaction, (2) affection, and (3) history of interaction. I asked each focal employee to describe the tie strength for each of the leaders and coworkers he/she identified in previous sections of the survey. I also included one item that measured closeness between ties. For each focal employee, I computed the average of his/her tie strengths for his/her CWX relationships. By having two different measures of CWX quality or strength I was able to see if there were differences in results based on the social exchange measure versus the social network measure.

Furthermore, each employee was asked to identify coworkers that helped them, that they regarded as a mentor, and that they regarded as a friend. These questions helped identify advice networks and friendship networks.

Second, I used two measures of power. First, I used a social network Eigenvector calculation to determine power, which considers an individual's power weighted by others in their network (Bonacich, 1987; 1972a, 1972b). I also determined each individual's informal power, by asking the focal employee to complete a 2-item 5-point Likert scale:

1. "How much informal influence does this person have in your organization?" anchored by "not a bit" to "a great deal" (Marsden 1990).
2. "How much power does this person have in your organization?" anchored by "not a bit" to "a great deal."

The third social network measure was *density.* I computed the sum of the actual number of ties reported by each focal employee and divided that number by the total number of possible ties (Ibarra 1995; Sparrow et al. 2001). The total number of possible ties I defined by the total number of other people in the organization that could be considered coworkers, that is people in the same work group (Sheroney & Green, 2002) as the given focal employee as well as people in other workgroups (Brandes et al, 2004).

Finally, Freeman (1979) proposed three different types of centrality: 1) distance centrality, 2) betweenness, and 3) degree centrality. First, distance centrality measures closeness as an eigenvector. Second, betweenness measures information control and power between ties. Finally, degree centrality is a count of reciprocal ties which controls for self-report bias and focuses on information sharing. Because degree centrality is the most common measure of centrality and because my hypotheses are based largely on information sharing, I used degree centrality for testing hypotheses concerning centrality. Centrality was computed using UCINET software package.

Dependent Variables

This section describes the measures that I used for the dependent variables in this dissertation, including performance and affective commitment. First, I determined employee *performance* from a 4 item self report performance measure (Welbourne, Johnson, and Erez 1998) as well as an objective sales measure for each individual. Second, I used Meyer, Allen, and Smith (1993) 6-item measure of affective organizational *commitment*.

Control Variables

I controlled for respondents' age, race, gender, average number of hours worked, organizational tenure, employee-leader tenure, and job tenure. I considered controlling for the shift of each employee because some shifts may tend to yield higher sales than other shifts. For example Saturdays tend to have higher sales volume than Mondays. However, through discussions with the store managers I discovered that employees are on a shift rotation and also often trade shifts with others. Therefore, I could not identify a primary work shift for each respondent. Thus, work shift was not included in the analysis. Because I made the assumption that leaders share more general information and coworkers are likely to share more specific information, I also controlled for leadership communication style and coworker communication style in the performance hypotheses using an adapted scale from Flood, Hannan, Smith, and Turner (2001). The items for the leadership and coworker communication style can be seen in the Table 1. Finally, I used a Venn-diagram measure controlling for organizational and work group identification to ensure that it was indeed the social network characteristics driving affective commitment rather than identification (Bergami and Bagozzi, 2000).

Level of Analysis

The unit of analysis in this dissertation was the individual focal employee. All variables were mearsured at the individual level.

Summary

This chapter discussed methodological issues and strategies pertaining to this dissertation, including the sampling method and data collection procedures, measures, level of analysis, power considerations, and analytic strategies. The next chapter describes the analysis and results.

CHAPTER 5: ANALYSIS AND RESULTS

In this chapter I will describe the analytical strategies used and the results found. First, I computed descriptive statistics. Next, I used UCINET and SPSS to perform hypothesis testing on the proposed relationships presented in Chapter 3. All tables and figures are presented in a separate section following Chapter 7: Conclusions and Future Research.

Descriptive Statistics

First, all of the written data was typed in to an excel spreadsheet and imported in to SPSS. Using SPSS I ran frequencies, minimums, and maximums on all of the items, ensuring that all data entered appeared to be correct and free from typographical errors. Second, I tested for differences between respondents and non-respondents. Third, I analyzed demographic data by again calculating frequencies and means on all of the demographic variables as well as ANOVAs of the categorical variables such as ethnicity and department. Fourth, I ran reliabilities on the scale items to determine if they could be aggregated into scale composite variables. Finally, I computed Pearson product-moment correlations between all variables. The following sections describe these procedures in detail.

Respondents

The organization in my sample had 368 employees. Surveys were provided to all employees. The human resource department of the organization provided a list of the employees, their employee numbers, their department, their role (sales or support), their job level, and their gender. Of the possible 368 survey participants, I received 180

completed surveys (48.9% response rate). I conducted a one-way ANOVA in SPSS to test if the respondents who completed the survey differed on department, sales groups versus support groups, level (employee or department manager), or gender from those who did not complete the survey. The ANOVA was significant for the respondent's department ($F_{(41, 326)} = 1.96$ $p<.01$) and sales versus support position ($F_{(1,366)} = 5.65$, $p<.05$). Upon examining the descriptive statistics for department, I found that the smaller departments tended to have higher response rates than the larger departments. Furthermore, one department had no response because they were less visible and more difficult to access because they were night employees. While surveys were available to those and all employees, I was not permitted in the store to personally hand them out when the store was not open to the public. Those who completed the survey and those who did not complete the survey did not differ on job level or gender.

I also conducted the response rate by department, sales versus support employees, and department manager versus sales employees. These data are shown in Table 2.

Demographic Data

In this study I measured multiple demographic variables to be used as controls including: gender, level in the organization, sales versus support positions, ethnicity, department, average number of hours worked, organizational tenure, employee-leader tenure, job tenure. The respondents were 74.4% female and 25.6% male, 86.7% first line employee level and 13.3% department manager level, 79.5% sales positions and 20.5% support positions. They also varied in ethnicity, being: 65.6% Caucasian, 20.6% Hispanic, 4.4% African American, 3.9% Asian, 0.6% Middle Eastern, 0.5% Indian and 4.4% Other. The age break down of the respondents was as follows: 2.2% 18-20 years,

62.8% 21-30 years, 13.9% 31-40 years, 11.7% 41-50 years, 8.3% 51-60 years, and 1.1% was 60+ years. On average the respondents worked 40.0 hours per week, had an organizational tenure of 27.4 months, job tenure of 15.9 months, and leader tenure of 12.3 months.

Two of the control variables were categorical: ethnicity and department. Therefore, I utilized one-way ANOVAs to ensure that results did not differ for respondents in various ethnic categories or departments. First, for ethnicity the ANOVA showed that the subjects in my sample did not differ in any of the variables of interest in this dissertation: LMX, sales per hour, self report performance, or commitment.

Second, I computed a one-way ANOVA by department. It showed that respondents did not differ on LMX, report performance, or commitment based on department. However, they did differ by department for the dependent variable sales per hour ($F_{(31,111)} = 1.84$ $p<.05$). Upon investigating the descriptive statistics for the ANOVA, I found that many of the results are due to the fact that the department managers are in a group of their own. Department managers have lower sales than first line sales employees because they spend time managing rather than just selling Specifically, the department managers average sales per hour was $90.37 while the first line employees average sales per hour was $139.41. Thus, I will conduct my performance hypothesis testing of sales per hour with employees only, excluding department managers. To ensure that this was appropriate, I conducted the ANOVA again by department including all departments but excluding department managers and found that the respondents did not differ on LMX, sales per hour, self report performance, or commitment.

Reliability Analysis

I then ran reliability analysis and correlations on scale items including: (1) self-report performance items, (2) commitment items, and (3) LMX items (4) Leader information sharing items (5) CWX items, (6) power items, and (7) coworker information sharing items. All scales had a Cronbach's Alpha above the acceptable level of .7, so composite variables were calculated. A summary of the reliability analysis may be found in Table 3.

Correlation Analysis

I conducted a correlation analysis with the demographic variables and the composite variables, performance, commitment and LMX. I found that sales was negatively correlated with level in the organization ($r = -0.36$ at $p<.01$). This is due to the back that department managers spend much of their time managing rather than selling so their sales numbers are expected to be lower than that of first-line sales employees. Sales was also positively correlated with LMX ($r = 0.19$ at $p<.05$) indicating that those who had higher sales performance also had high quality LMX relationships. The self report performance measure was negatively correlated with both age ($r = -0.15$ and $p<.05$) and LMX ($r = -0.16$ at $p<.05$). Indicating that older employees gave themselves lower performance ratings and employees with high quality LMX relationships gave themselves lower performance ratings. Perhaps older employees are more realistic about their performance and perhaps employees with high quality LMX relationships are not as concerned with monitoring their image in the organization. Commitment was highly correlated with LMX ($r = 0.26$ at $p<.01$) indicating that employees who had high commitment to the organization also had high quality LMX relationships. Furthermore,

organizational tenure, job tenure leader tenure, and age were all correlated. Finally, level in the organization was correlated with organizational tenure, leader tenure and hour of work per week. A full correlation matrix is provided in Table 4.

Hypothesis Testing

In order to calculate network variables, I converted my original coworker data excel file into a VNA text file and imported it into UCINET and NetDraw as described by Knoke and Kuklinski (1982) and Scott (1991). I then used these software packages to calculate degree centrality, strength of ties, betweeness, ego network density, and power as an Eigenvector (Bonnachich, 1987). I then converted these calculations into a SPSS file to be used for hypothesis testing.

I used regression commands in SPSS to test the impact of the combination of coworker relationships and leader relationship on employee attitudes and behaviors. Following prior research, I centered variables before computing interaction terms (e.g. Haunschild and Miner, 1997). I used hierarchical multiple regressions to determine the effect of the moderating variables on the relationship between LMX and the various outcome variables. For the outcome variables, performance and commitment, I first regressed the network variables simultaneously. Second, I ran simplified regressions reducing the number of variables to only include control variables, LMX, a single network variable and its interaction in order to see if the network variable had an effect in isolation, especially when a model had low power. I reported all regression coefficients as unstandardized beta weights and standard errors.

In the survey I asked respondents who they considered to be a mentor, a friend, and who mattered most to them. I then used these responses to construct 3 different networks for each respondent. I used these three networks in testing the hypotheses: advice network (mentor ties), friendship network (friend ties), and important coworker network (mentor ties, friendship ties or ties that matter most). The ties were coded 0 for no tie, and 1 for tie.

In this hypotheses testing section, I first present power considerations, followed by the results for exchange relationships only model, the results for performance hypotheses, and finally I present the results for the commitment hypotheses.

Power Considerations

The hypothesized relationships are complex and the number of relationships being studied are numerous compared to sample size (N=180). Therefore, statistical power is important. "Power" refers to the probability of rejecting the null hypothesis when it is false. If there is low power there is a high risk of Type II error (the probability that a true relationship would go undetected).

I use Cohen (1988) calculations to determine the power of the tests of relationships to the dependent variables in the conceptual model. Given selected values of alpha, effect size, and sample size, a computer program called "G-Power" computes the power. I selected the following values alpha=.05; given that the effect size is unknown I tested a range of power calculations for a small to medium effect size which is a reasonable estimate for social science research (f= .15 to .35), and a desirable power of .80 by convention (Cohen 1988). In this study, the predictors that I use are as follows:

1. Five predictor variables -strength of LMX, status, centrality, and density, betweenness
2. Five interaction variables - LMX x strength of CWX network, LMX x status of CWX, LMX x centrality of CWX network, and LMX x density of CWX network, LMX x betweenness
3. Nine control variables - age, ethnicity, gender, average number of hours worked per week, organizational tenure, employee-leader tenure, job tenure, level
4. Other controls for performance variables: Leader general information sharing, leader specific information sharing, coworker general information sharing, and coworker specific information sharing.
5. Other controls for commitment variables: organizational identification, work group identification

According to G-Power using all 180 respondents as well as the 123 sales employees, if the effect size is medium I have adequate power, above .8, to test my performance and commitment hypotheses. However, if the effect size is small then the likelihood of detecting a true relationship may be limited, as some models have power as low as .62. However, low power only limits the interpretability of non-significant results and statistically significant relationships would be considered valid. The power for each model is shown in Table 5.

Exchange Relationship Only Model

One of the basic premises of this dissertation is that we cannot look simply at exchange relationships to gain an understanding of employee attitudes and behaviors.

Rather, researchers should look at how the pattern of those social relationships, both with leaders and coworkers, operate jointly to influence outcomes. Therefore, the first step in the analysis was to get a "baseline" model that only considers social exchange variables. This "baseline" model included control variables, LMX, CWX mean (social exchange measure of CWX), and the interaction of CWX and LMX. For the sales and performance dependent variables I included CWX heterogeneity as a measure of diverse ties (the standard deviation divided by the mean multiplied by 100) and its interaction with LMX in the sales and self-report performance regressions. The CWX heterogeneity measure was only used in sales and performance models where diversity of ties is hypothesized to be important, and thus was not included in models predicting commitment. The results for the baseline model of CWX heterogeneity and LMX and the sales per hour dependent variable showed the models to be non-significant and beta weights for the main effect of CWX heterogeneity and its interaction with LMX were also non-significant (See Table 6). The results for the baseline model of CWX mean and LMX and the sales per hour dependent variable showed the models to be non-significant and beta weights for the main effect of CWX mean and its interaction with LMX were also non-significant (See Table 7). In both of these models only the main effect for LMX was significant (B = 12.90, SE =. 5.87, $p<.01$). Similar results were found for the self report performance dependent variable; again neither the main effects nor the interactions were significant for both CWX heterogeneity and CWX mean. Furthermore, LMX was not even a significant predictor of self report performance (See Tables 8 and 9). However, the results for the baseline model of CWX mean and LMX on the commitment dependent variable showed the models significant and beta weights for the main effect of CWX mean (B = 0.31, SE

= 0.08, p<.01) and LMX (B = 0.22, SE = 0.06, p<.01) were also both significant. The interaction was not significant (See Table 10). These results suggest that models using the CWX measure alone do not adequately explain performance and commitment and justify the investigation of the role of the social network of coworkers.

Performance Hypotheses

Recall that this dissertation assumes that leaders share general, broad information and coworkers share more specific job-related information. In order to test this assumption I asked respondents to rate on a 5-point agree/disagree scale if their leaders shared specific information and/or general information. I asked the same questions for each coworker. The items forming this scale demonstrated high reliability, so they were averaged (Leader General Information Sharing α = .87, Leader Specific Information Sharing α = .83, Coworker General Information Sharing α = .84, Coworker Specific Information Sharing α = .88). I conducted a paired t-test to test for differences in the means between the two types of information coworker share. I found that the mean for coworker specific information sharing (M = 3.38, SD = .76) was significantly higher than the mean for coworker general information sharing (M = 2.98, SD = .66), indicating that coworkers are more likely to share specific information than general information (t= 17.05, p<.01). I conducted the same paired t-test for the type of information leaders share and found that the mean for leader general information sharing (M = 4.13, SD = .68) was significantly higher than the mean for leader specific information sharing (M = 2.90, SD = .81), indicating that leaders share more general information than they do specific information (t= -7.87, p<.01). Thus, the assumption made in this dissertation is

supported for this setting. These findings may be found in Table 11. However, the information sharing control items were not significant, in sales models or self report performance models, so in order to preserve degrees of freedom and power they were dropped from the analysis. These results are shown in Table 12.

I hypothesized that performance is impacted by social networks through information sharing. The performance hypotheses were made about advice networks (mentor ties) or networks that share information because obtaining information is one of the primary ways in which employees can use their social network to achieve high performance (Hansen, 1999; Morrison, 2002). However, all ties can share information, not just mentor coworker ties in the advice network. Furthermore, most respondents only included a single person as a "mentor", making it more difficult to find significant results. Thus, I also tested these same variables in the important coworker network. Therefore, in the analysis of the performance hypotheses using dependent variables self report performance and the dependent variable sales per hour I utilized both the advice network (mentor ties) and the important coworker network (mentor ties, friendship ties, and ties that matter most).

I measured performance in two ways. First, I gathered a self-report performance measure based on the scale from Welbourne et al (1998). Upon conducting the analysis, I found that none of the self report performance models were statistically significant, nor were any of the variable beta weights significant, perhaps because of an individual's natural tendency to evaluate himself or herself high. A full table of these regressions with the self report dependent variable may be seen in Table 13. Therefore, I did not utilize the self report performance data in discussion of the hypotheses and results.

Second, I gathered actual sales data for each respondent for the pay period in which I conducted the survey. This sales measure is a more accurate measure of performance because it is the primary way in which the organization evaluates the performance of the sales people. However, there were employees in support roles who do not engage in sales, do not have a sales performance rating, and thus cannot be included in the sample for evaluating performance hypotheses. Also, recall department managers had statistically lower sales than that of first line sales employees because their performance is not only based on sales, but also on managing. Thus, in this analysis I present results using sales per hour as the dependent variable for first line sales employees only (N = 123).

Hypothesis 1a, Hypothesis 1b, and Hypothesis 1c

Hypothesis 1a stated that strong ties in an advice network and LMX jointly have a positive influence on performance by providing detailed information, strengthening the relationship between LMX and performance. Hypothesis 1b stated that weak ties in an advice coworker network and LMX jointly influence performance such that they do not change performance levels when LMX is high because they provide redundant information and increase performance slightly when LMX is low by providing general information. Thus, in the latter case, the relationship between LMX and performance is weakened. In order to test these hypotheses I utilized a hierarchical regression in the advice network which included controls variables, LMX, and all network measures and their interactions with LMX. A table of these results can be seen in Table 14. I looked for both a main effect of strong ties as well as an interaction effect; specifically I used the average or mean of the strength of ties. A high average would indicate strong coworker

ties and a low average would indicate weak coworker ties. However, I did not find a significant main effect for average strength of ties nor for the interaction of average strength of ties and LMX interaction in the advice network (See Table 14). Thet main effect of LMX was positive and significant and consisitent with previous research.

Because of the limited data on advice networks and because the interaction was not significant I conducted an additional test to see if an effect could be found in the important coworker network as shown in Table 14. Again, the results were non-significant. Finally, I also tested the effect of the interaction of average strength of ties and LMX in a simplified model which excluded all other network measures, and again the results were non-significant. These results are shown in Table 15. Thus, Hypothesis 1a and Hypothesis 1b were not supported.

Hypothesis 1c stated that diverse ties, both strong and weak, in an advice coworker network positively influence performance and strengthen the relationship between LMX and performance by providing both detailed and general information. In order to test this hypothesis I investigated the main effect and the interaction effect of the heterogeneity in strength of ties in the advice network. If there is high heterogeneity in the strength then individuals have both strong and weak ties, if there is low heterogeneity then individuals have primarily strong or primarily weak ties, but not both. Again LMX was positive and significant, but I did not find significant results for the main effect or the interaction effect of heterogeneity in strength of ties as shown in Table 14.

Again, I conducted additional tests, looking for the effect in the important coworker network. However, again LMX was positive and significant and, neither the main effect of heterogeneity in strength of ties nor the interaction effect was significant

(See Table 14). Finally, I looked for a main effect and/or interaction effect of heterogeneity of ties and LMX in a simplified model which included controls, LMX, heterogeneity of ties and the interaction between heterogeneity of ties and LMX by excluded all other network variables in the advice network. Again, the results were non-significant as shown in Table 16. Therefore, Hypothesis 1c was not supported.

Hypothesis 1d

Hypothesis 1d stated that high power advice networks do not change performance level when LMX is high and increase the performance level when LMX is low, such that the relationship between LMX and performance is weakened. Power was measured using the social network calculation of Eigenvector centrality, which is an acceptable measure of power (Bonacich, 1987). An Eigenvector considers the focal individual's centrality, weighted by the centralities of his/her ties. When ties are central they have power that can be utilized by the focal employee (Mixruichi, 1982; Mintx and Schwarts, 1985).

I conducted a hierarchical regression model in the advice network that included control variables, LMX, network variables and their interactions for sales employees only. In all models that I used the main effect of LMX was positive and significant. I found that in this full model the Eigenvector measure of power had a positive significant main effect ($B = 4079.38$, $SE = 1858.79$, $p<.01$), indicating that employees who had powerful networks had high performance. The interaction variable was not significant in the full model. (See Table 14)

Therefore, I conducted an additional analysis and looked for an interaction effect of power and LMX in the important coworker network. Once again the results were

significant for the main effect of important coworker network power (B = 1975.14, SE = 999.61, p<.01) and non-significant for the interaction terms shown in Table 14. Because statistical power may be limited due to the large number of variables, I also computed a simplified advice network model which included controls, LMX, advice network power main effect, and advice network power and LMX interaction. In the simplified model, I found that the Eigenvector measure of power still had a positive main effect (B = 4670.77, SE = 1491.32, p<.01) and the interaction term was also significant (B = 3966.69, SE = 1327.30, p<.05). These results of the simple model are shown in Table 17.

In order to interpret the interaction terms, I used Aiken and West (1991) procedure to plot the simple slopes of significant two-way interactions. The slope of the line when advice network power is high is significant (B = 238.72, SE = 115.86, p<.05). The slope of the line when advice network power is low is not significant. The plot of this interaction is shown in Figure 1. In the advice network the plot shows that the joint effect of power and LMX increases performance when LMX is low and also when LMX is high and ultimately strengthens the relationship between LMX and sales performance. Therefore, Hypothesis 1d is partially supported.

Hypothesis 1e and Hypothesis 1f

Hypothesis 1e stated that sparse CWX advice networks increase performance levels when LMX is high and have the greatest increase in performance levels when LMX is low, such that the relationship between LMX and performance is weakened. Hypothesis 1f stated that dense advice CWX networks do not influence performance levels when LMX is high and increase performance levels slightly when LMX is low such that the relationship between LMX and performance is weakened. I again

conducted the analysis with the full models in the advice network including controls, network main effects, LMX, and interactions between LMX and network variables. Results shown in Table 14 reveal LMX was positive and significant and that neither the main effect nor the interaction effect of density were significant. Once again, this is probably due to the limited data in the mentor network, as many respondents only selected a single mentor.

In the additional analysis, I found that the interaction term was significant in the important coworker network model (B = -41.22, SE = 19.54, $p<.05$). Furthermore, it is also significant in a simplified advice network model (B = -53.48, SE = 17.70, $p<.01$), which includes density and its interaction with LMX, but excludes all other network measures. The results for the important coworker model are shown in Table 14; the simplified advice network model is shown in Table 18.

When the graph is plotted for the interaction of density and LMX in the important coworker network, using Aiken and West (1991), the slope of the line for representing dense coworker ties is not significant, but the slope of the line representing when ties are sparse is significant (B = 27.38, SE = 9.99, $p<.05$) . The plot of the interaction in the simplified advice network mode is similar (B = 34.23, SE = 9.64, $p<.01$). Thus, the graphs both reveal that sparse ties improve performance when LMX is high but decrease performance when LMX is low and dense ties do not change performance. The graphs for these two interaction terms are shown in Figure 2 and Figure 3. Thus, Hypothesis 1e is partially supported and Hypothesis 1f is not supported.

Hypothesis 1g, 1h

Hypothesis 1g stated that central positions in CWX advice networks have a positive main effect on performance levels due to the gain in information. In order to test this hypothesis, I used a hierarchical regression of the control variables and advice network variables on performance as shown in Table 14. The main effect for LMX was positive and significant. The main effect for degree centrality was not significant. However, again I conducted additional tests because of limited data in the "advice network" and other ties may also share information, I also tested for the main effect in the important coworker network. In this network the main effect of degree centrality on performance measured by sales was significant as shown in Table 14 ($B = 3.55$, $SE = 1.35$, $p<.05$). Thus, Hypothesis 1g was partially supported.

Hypothesis 1h stated that central positions in CWX advice networks increase performance levels slightly when LMX is high and increase performance levels by the greatest amount when LMX is low, such that the relationship between LMX and performance is weakened. In order to test this hypothesis I utilized a hierarchical regression model in the advice network which included all controls, LMX, advice network variables and the interactions between the network variables and LMX. However, once again, I did not find significant results for the interaction of degree centrality and LMX on performance perhaps due to the limited data. These results are shown in Table 14.

I again conducted additional tests. I looked for a significant interaction term in the important coworker network including all control variables, LMX, important coworker network variables, and their interactions with LMX. In this model the

interaction term was significant (B = 2.49, SE = 1.34, p<.01). Finally, I also checked for a significant interaction between advice network degree centrality and LMX in a simplified advice coworker network which excluded all network variables except for degree centrality. In this model, the interaction term was also significant (B = 6.31, SE = 2.83, p<.05). The results for the simplified advice network degree centrality model are shown in Table 19.

When the graph is plotted, using Aiken and West (1991), of the interaction between degree centrality and LMX on sales performance in the important coworker network it shows that the slope of the line representing a highly central position in the network is highly significant (B = 29.14, SE = 7.53, p<.01). Furthermore, it shows a positive main effect of degree centrality, supporting Hypothesis 1g. It also shows that performance levels increase when centrality is high and LMX is high and as well as when centrality is low and LMX is low, which support Hypothesis 1h. However, the greatest effect occurs when LMX is high, strengthening the relationship between LMX and performance. Furthermore, the slope of the line repressing a peripheral position in the network is not significant; indicating that being peripheral in a network does not have a joint effect with LMX to influence sales performance. This graph is shown in Figure 4. The results are similar, for the interaction in the simplified advice network model (B = 31.72, SE = 7.15, p<.01), shown in Figure 5. Thus, Hypothesis 1h is partially supported.

Summary of Joint effects of LMX and CWX Advice Networks on Performance

			Hypothesized Performance Outcome Effect	Results
CWX	Strength	Strong (H1a)	Amplifies LMX	Not supported
		Weak (H1b)	Compensatory	Not supported
		Diverse (H1c)	Compensatory	Not supported
	Power	Low Power (H1d)	No Effect	Supported
		High Power (H1d)	Compensatory	Partially supported
	Density	Sparse (H1e)	Compensatory	Partially supported
		Dense (H1f)	Slight Compensatory	Not Supported
	Centrality	Central (H1g)	Positive main effect	Partially Supported
		Central (H1h)	Compensatory	Partially supported
		Peripheral (H1h)	No Effect	Supported

Commitment Dependent Variable

Commitment data were gathered using a scale for affective commitment from Meyer et al. (1993). The commitment hypotheses were developed about friendship networks because they provide a sense of belonging and identity (Brass 1984; Krackhardt 1992; Podolny and Baron 1997) as well as social support and help (Nelson 1989; Campion et al. 1993; Abraham 1999).

Commitment and identification are often closely related. Therefore, in order to rule out alternative explanations I measured organizational and work group identification and then controlled for it. In studying the control variables, which included organizational tenure, job tenure, leader tenure, gender, hours of work per week, age, organizational identification, work group identification, and level, I found that organizational identification was a significant predictor of commitment (B = .17 SE = .04 at $p<.01$). Therefore, the identification controls were included in all commitment models.

I added a control variable for level because I utilized both first line sales employees and department managers in the analysis of the dependent variable commitment. I did not use level as a control in the performance sales per hour models because I only used first line sales employees. However, the level control was not a significant predictor of commitment (r = .07; B = .06, SE = .18). It was, however, correlated with many other variables and yielded multicollinearity problems. I conducted a multicollinearity diagnosis using the variance inflation factor (VIF). The VIF for level when it was included in the diagnosis was over the minimum value of 10. Therefore, I dropped level from the analysis.

In all models the main effect of LMX was positive and significant (B = 0.13, SE = 0.06, p< .05). This finding is consistent with previous research.

Hypothesis 2a and Hypothesis 2b

Hypothesis 2a stated that strong CWX relationships in friendship networks have a positive main effect on affective commitment by providing support and help. I tested this hypothesis by looking for a main effect of average strength of ties in a hierarchical regression in the friendship network including control variables and friendship network variables. I did find a significant main effect for the strength of ties on sales performance (B = .17, SE = .08, p<.01), supporting Hypothesis 2a. A table of these results can be found in Table 21.

Hypothesis 2b stated that strong CWX relationships in friendship networks increase the level of affective commitment by the greatest amount when LMX is low and increase the level of affective commitment slightly when LMX is high, such that the relationship between LMX and affective commitment is weakened. Again, I tested this hypothesis in the friendship network with a hierarchical regression of controls, LMX, friendship network variables and their interactions. The interaction term was not significant as shown in Table 21.

In an additional analysis, I also checked for a significant interaction in a simplified model which included the friendship strength of ties, but excluded all other control variables. Once again, the main effect was significant (B = .21, SE = .08, p<.01) but the interaction term was not significant, as shown in Table 22. Thus, Hypothesis 1b was not supported.

Hypothesis 2c and Hypothesis 2d

Hypothesis 2c stated that high power CWX friendship networks have a positive main effect on affective commitment. I tested this hypothesis by using a hierarchical regression model which included controls and friendship network variables. Specifically, I was looking for a significant main effect of the friendship network power. I did not find a significant main effect for friendship network power on commitment, shown in Table 21. Additionally I tested the main effect in a simplified model, shown in Table 23, which included the power variable but excluded all other network variables. Again the effect was not significant. Therefore, Hypothesis 2c was not supported.

Hypothesis 2d stated that high power CWX friendship networks increase the level of affective commitment by the greatest amount when LMX is high and marginally increase affective commitment when LMX is low, such that the relationship between LMX and affective commitment is strengthened. I tested this hypothesis with a full model in the friendship network including all control variables, social network variables, and all interactions with LMX, as shown in Table 21. I found that the friendship network power interaction with LMX did not have a significant effect.

As an additional test, I checked for a significant interaction between friendship network power and LMX in a simplified model excluding all social network variables except friendship network power. I found that the friendship network power interaction with LMX variable did not have a significant effect in the simplified model, as shown in Table 23.

Finally, I tested the interaction between friendship network power and LMX in a model which included most control variables, all social network variables and their

interactions with LMX, but excluded the identification control variables (see Table 21). In this friendship network model power did have a significant interaction effect (B = 4.01, SE = 1.99, P<.05). The graph revealed that the slope of the line when friendship power was high was significant (B = .43, SE = .14, p<.01), it was not significant however, when friendship power was low as shown in Figure 6. Thus, the graph indicates that the joint effect of powerful friendship networks and LMX relationships strengthens performances, especially when LMX is high. Low power friendship ties do not influence performance. Thus, Hypothesis 2d was supported in this model. However, this finding should be interpreted with caution because the identification variables were omitted. Therefore, friendship network power and the identifications variables may be capturing some of the same variance. However, friendship network power is not correlated with organizational identification (r = -0.04) or workgroup identification (r = -0.03).

Hypothesis 2e, Hypothesis 2f, and Hypothesis 2g

Hypothesis 2e stated that dense CWX friendship networks have a positive main effect on affective commitment. I tested this hypothesis with a hierarchical regression including all control variables and friendship network variables. I found that friendship network density did have a positive main effect on commitment (B = .33, SE = .15, p<.01), supporting Hypothesis 2e. These results are shown in Table 21.

Hypothesis 2f stated that dense CWX friendship networks increase the level of affective commitment by the greatest amount when LMX is low and marginally increase affective commitment when LMX is high, such that the relationship between LMX and affective commitment is weakened. Hypothesis 2g stated that sparse CWX friendship

networks reduce the level of affective commitment when LMX is low and does not affect the level of affective commitment when LMX is high, such that the relationship between LMX and affective commitment is strengthened. I tested these hypotheses with a hierarchical regression, shown in Table 21, including all control variables and friendship network variables, LMX and interactions between the friendship network variables and LMX. I did not find a significant effect of the interaction between friendship network density and LMX.

Additionally, I looked for an interaction effect in a simplified model that included all control variables, friendship network density, LMX and the corresponding interaction. I did find a significant main effect of friendship network density (B = .45, SE = .14, $p<.01$). However, the interaction term was not significant. Thus, Hypothesis 2f and Hypothesis 2g were not supported.

Hypothesis 2h, 2i, 2j

Hypothesis 2h stated that central positions in CWX friendship have a positive main effect on affective commitment. I tested this hypothesis with a hierarchical regression including all control variables and all friendship network variables. I found that friendship network degree centrality did not have a significant main effect as shown in Table 21. Additionally, I checked for a main effect in the simplified model and again the results were not significant, as shown in Table 25. Thus, Hypothesis 2h was not supported.

H2i stated that central positions in friendship networks increase the level of affective commitment by the greatest amount when LMX is low and marginally increase the level of affective commitment when LMX is high, such that the relationship between

LMX and affective commitment is weakened. Hypothesis 2j stated that peripheral positions CWX friendship networks reduce the level of affective commitment by the greatest amount when LMX is low and do not chance the level of affective commitment when LMX is and high, such that the relationship between LMX and affective commitment is strengthened. I tested these hypotheses with a hierarchical regression including all control variables, all friendship network variables, LMX and all interactions between the network variables and LMX. The interaction between friendship network degree centrality and LMX was not significant.

Therefore, I conducted additional tests using simplified models. First, I used a model that included all controls, friendship network degree centrality, LMX and the corresponding interaction, but excluded all other network variables and interactions. In this model the interaction between friendship network degree centrality and LMX was not significant, as shown in Table 25. I further tested these hypotheses in the models that included all variables but excluded the identification control variables and again the results were not significant, as shown in Table 21. Thus, Hypotheses 2i and Hypothesis 2j were not supported.

Summary of Joint effects of LMX and CWX Friendship Networks on Commitment

			Hypothesized Commitment Outcome Effect	Results
CWX	Strength	Main effect (H2a)	Positive	Supported
		Strong (H2b)	Compensatory	Not supported
		Weak (H2b)	No effect	Supported
		Diverse	-	-
	Power	Main effect (H2c)	Positive	Not Supported
		High Power (H2d)	Additive	Partially Supported
		Low Power (H2d)	No effect	Supported
	Density	Main Effect (H2e)	Positive	Supported
		Dense (H2f)	Compensatory	Not Supported
		Sparse (H2g)	attenuate	Not Supported
	Centrality	Central (H1h)	Positive main effect	Not Supported
		Central (H1i)	Compensatory	Not Supported
		Peripheral (H1j)	attenuate	Not Supported

Summary

This chapter presented the analytic techniques used to test the hypotheses as well as the results that followed. It includes tables and charts of the results as well as graphical representations of the significant interactions. The next chapter discusses these results, important findings, and key implications.

CHAPTER 6: CONCULSION AND FUTURE RESEARCH

In this chapter I discuss the results that were presented in Chapter 5, as well as the theoretical, empirical and managerial implications for those results. Furthermore, I also address specific limitations and future research directions of this dissertation.

I began by developing an argument that social exchange relationships, those with leaders and coworkers, must be considered simultaneously. It is not sufficient to study them independently because they co-occur in real world situations. Further, in order to study them simultaneously, I applied a social network framework to these social exchange relationships. Therefore, the focus of this dissertation is on how characteristics of coworker social networks and leader-member exchange relationships jointly influence the organizational outcomes performance and commitment. I found that the coworker social network framework is useful in explaining these outcomes. Additionally, I found that the impacts of some network variables are additive, some are compensatory, some detrimental, and some variables lose their impact in the presence of others.

The first set of propositions was that coworker advice networks and LMX jointly influence performance. First, I hypothesized that strong ties, weak ties, and heterogeneous ties will moderate the relationship between LMX and performance. However, in this situation neither strong nor weak nor heterogeneous ties had a moderating effect on LMX and performance. Furthermore, they did not even have a main effect on performance. It is perplexing that none of the strength variables seemed to have an effect on performance, especially when prior research has found significant results (e.g. Jehn and Shah 1996; Morrison 2002). It may be that in this setting there was little variance in the strength of ties, that is, the majority of people listed ties as average in

strength so no results were found (Average strength of ties M = 3.5, SD =.666; heterogeneity strength of ties M = .577, SD = .551). Furthermore, research suggests that strong ties are most beneficial to performance when information is complex (Hansen, 1999) and that weak ties are most beneficial to performance when coordination between groups is required (Hansen 1999; Morrison 2002). In this setting, in when employees were selling clothing, shoes, and accessories the information necessary to do their jobs may not have been complex. Furthermore, while coordination between groups may be beneficial for performance it may not be required in this setting. However, these findings are important because they highlight the fact that we cannot look at the nature of ties and neglect the structure of ties if we want to gain an understanding of the joint influences of leader member exchange and coworker relationships on performance.

The second hypothesis was that network power has a main effect as well as a joint effect with LMX on performance. The empirical results show that network power has a large main effect on performance. Furthermore, the joint effect of LMX and network power strengthens the relationship between LMX and performance. As predicted, high power networks are beneficial and may compensate for low quality LMX relationships, perhaps offering information where LMX does not. However, high power networks also improve performance when LMX is high. This finding was unexpected. It may be that the added information and social pressure from high power networks amplify the performance benefits from high quality LMX relationships. Furthermore, it may also be that the political advantages associated with high power networks place the focal sales employee in a situation to receive more recognition from the leader which encourages high performance. Interestingly, the graph depicting the slope of the line for low power

ties was close to being significant ($p<.1$). This may suggest low power mentor networks can actually be detrimental to performance when LMX is high. Perhaps individuals with low power networks do not feel pressure to perform, and thus develop a sense of separation, apathy, and discouragement towards their work that the leader cannot eliminate. This is an area in which future research should be undertaken.

The third performance hypothesis was that density and LMX jointly influence performance. Specifically, dense ties weaken the relationship between LMX and performance and sparse ties compensate for low quality LMX relationships and amplify the performance benefits when LMX is high. However, I found that sparse ties were detrimental to performance when LMX was low. Perhaps when an employee has a weak LMX relationship and is not receiving information from his/her leader he/she may not know how to use information from sparse ties and may actually use it in incorrect ways that are detrimental to performance. As expected sparse ties do have large positive effects on performance when LMX is high. Sparse networks provide diverse information to the focal employee that is perhaps like a puzzle. The additional information is beneficial, but only when it is jointly combined with a leader relationship which aids in putting the information together to make it useful. Dense ties did not affect performance. This finding can be explained because dense ties likely share repetitive information that is not useful to performance.

The fourth performance hypothesis was that centrality in a coworker network compensates for low performance associated with low quality LMX and amplifies the high performance associated with high quality LMX. As expected being central in coworker network did have a positive influence on LMX when LMX was both high and

low. However, I did not expect that the influence would be greatest when LMX was high. Individuals in central positions receive more information that should be beneficial for performance. However, it appears that the information that comes from being central is most beneficial for performance when jointly combined with high quality LMX relationship. Perhaps the leaders help the focal individual gain the performance benefits by interpreting information.

The second set of propositions was that coworker friendship networks and LMX jointly influence affective commitment. Affective commitment is an expression of employees' emotional attachment to, identification with, and involvement in their organization (Meyer and Allen 1991). I first hypothesized that strong ties would have a main effect, as well as a moderating effect on LMX and performance. Strong ties did have a strong main effect which was anticipated. However, they did not have an interaction effect, which was unexpected. Perhaps because the main effect was so overwhelmingly strong that it operated entirely independent of LMX.

Second, I hypothesized that power and LMX would jointly influence commitment. This effect was only present when identification controls were not included in the model. The results showed that the joint effect of powerful friendship networks and LMX relationships strengthens performance, especially when LMX is high. Low power friendship ties do not influence performance. I argued that power would influence commitment because employees with powerful networks would gain a sense of "reflective glory." Cialdini et al (1976) argued that people developed a positive self image or "reflective glory" and identified with others who were in positions of power and prestige. Similarly, social powerful networks should offer a sense of identity and

commitment. Perhaps that identity and ultimately commitment that is gained from powerful networks does not add to commitment when the organizational affective commitment is high. That is, they may capture the same variance when explaining commitment.

The third hypothesis was that friendship network density would have a main effect and a moderating effect with LMX commitment. Specifically, dense ties would compensate for weak LMX relationships and sparse ties would be detrimental to commitment. Density of ties did have a strong main effect on commitment such that employees with a dense network seem to have high commitment, suggesting that the relationships that develop among strong ties and the sense of group identity does impact commitment. Dense ties did not have a moderating effect indicating that the effect is independent of LMX.

Finally, I hypothesized that network centrality would have a main effect on commitment and would together, with LMX, jointly influence commitment. I found that being central had a positive main effect on commitment in the friendship network and no moderating effect. Therefore, perhaps being central in a coworker network and having a high quality LMX relationship network are both so strong that both need to be present in order to have high commitment.

Theoretical and Research Implications

This dissertation contributes to theory in three ways. First, this dissertation adds to social exchange theory and presents complexities associated with maintaining multiple types of social exchange relationships. As relationships influence other relationships a

complex web of those relationships emerges. Previous social exchange research has investigated dyadic relationship. This dissertation finds that models including social network variables explain more variance than models that only include leader-member exchange or only social network variables. (See Table 14 and Table 21). Furthermore, this dissertation contributes to LMX literature by consistently finding a positive effect of LMX on both performance and affective commitment where there had previously been conflicting results.

Second, this dissertation finds that the leader-member relationship remains an important and primary work relationship that influences performance and commitment. The performance results revealed that power, sparse ties, and centrality all improved performance when the leader relationship was high quality. Thus, the leader may serve as the interpreter and decoder of information that flows through networks to make the information useful. Furthermore, the network variables strength, power and density directly and positively impacted commitment. Yet, the leader member relationship also remains an important predictor of commitment. Because the LMX relationship has a positive impact on commitment, the implication is that the leader is always important to employee commitment and cannot be replaced by a network of coworkers. Likewise, the coworkers are equally important and cannot be overlooked. Also, power interacts with the LMX relationship improving commitment when LMX is high. Thus, the leader may help build a commonality between coworkers and sense of community that doesn't exist when LMX is low.

Third, this dissertation extends social network research. This dissertation highlights the fact that different network characteristics may be important for different

outcome variables. The primary predictors of performance were structural characteristics of the coworker network: power, density, and network centrality. Thus, information flows and control that comes from network structure may have a greater influence on performance than strength of ties. Strength, power, and density all had some effect on affective commitment. For instance, sparse ties jointly with LMX positively impact performance. However, it is dense ties that positively impact commitment. Therefore, research should continue to investigate how different network characteristics operate differently on a variety of organizational outcomes. Thus, the results of the dissertation add value to both the social exchange literature as well as the social network literature.

Empirical Implications

Third, this dissertation has empirical implications by adding the social network perspective to social exchange research. The findings suggest that researchers should not be using social exchange measure of CWX which only looks at dyads of coworkers; instead networks of coworker should be used. In studying the baseline model the coworker exchange variables were not predictive as a main effect or an interaction effect of sales performance, self-report performance. Only strength of CWX influenced commitment. However, in the models that included specific coworker social networks characteristics, those networks had a direct impact on both performance and commitment, as well, as indirect impacts via LMX on performance and commitment. Therefore, it should be noted that the best way to study coworker relationships is by studying their nature and structure within a social network framework. Future research should use competing models.

Managerial Implications

Finally, this dissertation also has implications for managers. Managers have long been told and believe that leaders are one of the most important influences on employee attitudes and behaviors. However, research shows that this "romance of leadership" provides an unrealistic sense of both need and obligation of leaders (Meindl, Ehrlich, and Dukerich, 1985; Meindl and Ehrlich, 1987). While this dissertation finds that leaders are important influences of performance and commitment the coworker relationships are also important influences. Therefore, using the results managers may be able to gain some understanding of the types of networks of coworkers that positively impact performance and commitment. Furthermore, knowing this, managers may ultimately be able to build networks, by nourishing the "right" kinds of relationships that will improve performance and commitment. This network building may occur through mentoring relationships, organizational and team social events, training, and team building activities. By improving this web of relationships managers may be able to compensate for a single weak relationship or enhance the positive effect of a strong leader-member relationship improving organizationally relevant outcomes.

Limitations and Future Research Directions

First, this dissertation suggested that it is important to study the complex web of social exchange relationships by using social networks. However, many of the hypotheses were not supported or partially supported. Therefore, it could be that the complexity clouds our understanding of social relationships and a dyadic approach is still

useful. However, the results in this dissertation are largely due to the sample used. In this sample of a paternalistic organization with commission based sales employees affective commitment and job complexity is low relative to many other jobs. Thus, future research should consider other settings in which commitment and job complexity are likely to be higher. In such a setting, the results may be more profound. However, given this setting, the findings in this dissertation are remarkable. In this setting the leader was needed capitalize on the benefits from the network. This may not be the case in other settings. Future research should ask the question, "To what extent does the importance of the leader to the subordinate influence the impact of coworker networks?" Another interesting investigation would be to investigate these relationships in various types of organizations such as non-profit or volunteer based organizations.

Second, this study is cross-sectional in design; therefore, it is difficult to define causality and to determine if the effects found here persist over time. Future research should consider the element of time. LMX develops more slowly than CWX but perhaps is more enduring. So it may be that CWX moderates LMX relationships in the short term but that as the LMX relationship grows over time it then moderates CWX relationships. For example, it could be that leaders push their subordinates with whom they have a high quality relation to develop ties that are beneficial for performance and commitment. It would also be interesting to investigate these same questions at an organizational level to see if a leader of an organization can structure the internal network of the organization to achieve maximum utility. Thus, future research should be longitudinal and should investigate the potential long-term sustainability of relationships proposed in this study.

A third limitation is that in order to gather a large enough sample, leaders of the organization ask employees to participate in the study. While they are not the employees' immediate leaders who are referred to in the study, this could potentially skew the results. For instance, it may be that only people who have strong relationships with the leader or like the organization are willing to complete the survey. It may also be that only people who have weak relationships with their leaders complete the survey as a way to voice their frustration. Future research should consider ways to gather data without the influence of people within the organization.

Fourth, I make the assumption that strong LMX relationships tend to provide employees with more broad, general, organizational information rather than job-specific, detailed information. However, some leaders may do the exact opposite. Thus, the type of information offered may vary by the type of leader. For example, delegating leaders may in fact provide primarily broad, global information while directing, micro-managing leaders may provide primarily very detailed information. In each of these cases the most beneficial and influential network of CWX ties may be different. I controlled for leadership communication style, however future research should consider how different leadership styles impact the LMX relationship and outcomes, as well as how CWX ties influence that relationship.

Like many studies, a fifth limitation of this study is that it cannot possibly consider all variables that may influence LMX and outcomes. Future research should consider other exchange relationships as well, such as team-member exchange and employee-organization exchange. It would also be interesting to investigate the likelihood of the proposed relationships in varying employee-organization contextual

situations. For example, how would the nature of two employees' social network of exchange relationships differ according to the level of relational development, clarity and stability they posses with their organizations? Due to the volatility of startups this question is an important consideration. If employees believe that their relationships to their organizations are temporary in nature, their social relationships may be different from employees who invest their beliefs in the long-term future of their organizations.

Sixth, this dissertation does not study negative or detrimental social network relationships. For instance, in social network research, both strong ties and weak ties have potential benefits to focal employees. Specifically, in this dissertation, I argue that both strong and weak ties will have an incremental positive effect on the relationship between LMX and performance. This may be because while both strong and weak ties may not always offer useful information, they are not likely to give bad or incorrect information that negative ties may give. Therefore, it does not consider the coworker ties that may negatively impact the existing LMX relationship and performance. Thus, future research should consider relationships that may be characterized by dislike, disrespect, and contempt. Nevertheless, this study does utilized two different measures, strength of ties from social network research and quality of ties from social exchange research, that help provide understanding of low quality relationships. Still, future research should consider the effect of negative social network relationships.

Seventh, this dissertation makes the assumption that when coworker and leaders share information, that information is useful for performance. In fact, most research shows that information sharing is beneficial for performance (Campbell et al. 1986). However, the way in which that information is shared may influence the extent to which

it is actually utilized by employees. For instance, if information is shared in a professional and constructive way the information may be utilized, and therefore useful for performance. However, if information is shared in a negative or condemning way, that information may be ignored and therefore not useful for performance. For example, negative ties, may share information in a negative way. This assumption may be controlled for in this study, because if a coworker shares information in a negative way the focal employee will likely not go to that particular coworker for information. However, future research should consider this mechanism of how information is shared as a driver in determining the impact of information on performance.

Eighth, this dissertation does not consider the effect of coworker attitude matching. Totterdell et al. (2004) argued coworkers transmit work attitudes in a network. Others have also shown that as individuals in work group interact, they influence each other to produce homogeneity of beliefs (Carley 1991). Thus, these researchers argue that in some situations coworkers could influence focal employees' attitudes both positively and negatively. I have argued that a lack of ties may encourage negative attitudes. Yet, it may be that employees who have many strong ties may also be influenced to have negative attitudes by matching the attitudes of their coworkers. Future research should consider exactly how and when coworkers influence focal employees to maintain negative attitudes.

Ninth, I hypothesize and measure performance and commitment as two distinct dependent variables. In fact, they may be related. It may be that individuals who have high performance also have high commitment or individuals who receive more support and thus have higher commitment have higher performance because the feel more

ownership in their organization and their job. However, in this study the correlations between sales performance and commitment and also between self report performance and commitment were not significant. Thus, in this study the variables were in fact independent of each other. However, future research should consider exactly what mechanisms may drive these variables to be related and the implications of that relationship.

Finally, there are many social network variables not considered in this study, as well as, many social network questions that still remain unanswered. Thus, future research should also consider other social network characteristics such as multiplexity or structural equivalence. Future research should consider questions such as, "what type antecedents cause employees in varying social exchange relationships to be more central in their network? to have a denser network? to have stronger ties? And do individuals with similar social networks and similar exchange relationships have similar attitudinal and behavioral patterns?" Finally, future research should assess, measure, and control for other factors such as employee personality that could possibly influence the social networks of exchange relationships.

Conclusion

This dissertation was rooted in social network literature, the idea that relationships co-occur, and the idea that the structure, as well as, the quality of those relationships is important to organizational outcomes. In this dissertation, I looked at how leader relationships and coworker relationships jointly influence performance and commitment by way of the social network. Evidence from this dissertation suggests that the answer is

not straight forward and different aspects of coworker networks influence outcomes differentially. Yet, emerging from this dissertation is an interesting distinction between the networks that influence performance and those that influence commitment. Although different types of networks were examined (advice versus friendship), different aspect of the networks proved important for the different organizational outcome variables. Additionally, this dissertation lays the foundation for further exploration of multiple types of social exchange relationships to be studied simultaneously. Finally, this dissertation also provides evidence of the importance of both leader and coworker relationships.

TABLES

Table 1: Summary of Survey Items

Demographics
1. What is your age?
2. What is your gender?
3. What is your ethnicity?
4. How long have you been working for this organization?
5. How long have you been in your current role in this organization?
6. How long have you directly reported to your current leader?
Leader Communication Style (adapted from Leadership Scale, Flood et al 2001)
7. My leader gives general guidance about how to do my job.
8. My leader provides a vision to the organization.
9. My leader tells me details of how to do my job.
10. When it comes to my work, my leader gives me specific instructions on how to carry it out.
Relationship with your leader (Graen & Uhl-Bien, 1995)
11. Do you know where you stand with your leader? Do you usually know how satisfied your leader is with what you do?
12. How well does your leader understand your job problems and needs?
13. How well does your leader recognize your potential?
14. Regardless of how much formal authority he/she has built into his/ her position, what are the chances that your leader would use his/ h4r power to help you solve problems in your work?
15. Again, regardless of the amount of formal authority your leader has, what are the chances that he/ she would "bail you out," at his/ her expense?
16. I have enough confidence in my leader that I would defend and justify his/ her decision if he/she were not present to do so?
17. How would you characterize your working relationship with your leader?

Table 1, continued

Relationship with your coworkers (Sherony & Green, 2002)

18. Do you know where you stand with your coworker?

19. How well does this coworker understand your job problems and needs?

20. What are the chances that your coworker would use his/ her power to help you solve problems in your work?

21. What are the chances that he/ she would "bail you out," at his/ her expense?

22. I have enough confidence in my coworker that I would defend and justify his/ her decision (to a superior) if he/she were not present to do so?

23. How would you characterize your working relationship with your coworker?

Social Networks - Strength of ties (Krackhardt, 1992)

24. I consider this individual to be a close colleague.

25. During the past year, how often have you sought or received information or advice from this person

26. How often do you go to this person for work-related advice?"

Social Networks - Power of Ties (Marsden 1990)

28. How much informal influence does this person have in your organization?

29. How much power does this person have in your organization?

Commitment (Meyer et al. 1993 – affective organizational commitment)

30. I really feel as if this organization's problems are my own.

31. I do not feel a strong sense of belonging to my organization.

32. I do not feel "emotionally attached" to this organization.

33. I do not feel like "part of the family" at my organization.

34. This organization has a great deal of personal meaning to me.

35. I would be happy to spend the rest of my career with this organization.

Table 1, continued

Role based Performance Scale (Welbourne et al, 1998)
36. How would you rate the quantity of your work output?
37 How would you rate the quality of your work output?
38. How would you rate the accuracy of your work?
39. How would you rate the customer service that you provide?

Table 2: Study Response Rate

	Non-respondent	Respondent	Total	Frequency
Department				
accessories	1	2	3	66.7%
alterations	8	1	9	11.1%
BP shoes	9	9	18	50.0%
BP	13	5	18	27.8%
building services	3	4	7	57.1%
children's shoes	9	2	11	18.2%
collectors	0	2	2	100.0%
cosmetics	28	15	43	34.9%
cosmetics/ women's fragrances	0	3	3	100.0%
cosmetics/ men's fragrances	0	2	2	100.0%
Customer Service	8	6	14	42.9%
pianists	4	1	5	20.0%
encore	2	2	4	50.0%
girls and boys	2	4	6	66.7%
ebar	10	3	13	23.1%
handbags	0	4	4	100.0%
Hosiery	0	3	3	100.0%
individualist	2	3	5	60.0%
infants	0	2	2	100.0%
Jewelry	2	3	5	60.0%
Lingerie	1	8	9	88.9%
Men's Faco	4	6	10	60.0%
Men's clothing	3	1	4	25.0%
Men's Accessories	4	5	9	55.6%
Men's shoes	4	7	11	63.6%
Narrative	6	1	7	14.3%
Cafe Dining	10	11	21	52.4%
Cafe Kitchen	9	4	13	30.8%
Personal Touch	0	2	2	100.0%
Petite	2	1	3	33.3%
Point of View	4	3	7	42.9%
Receiving	5	1	6	16.7%
Salon Shoes	4	6	10	60.0%
Savvy	0	1	1	100.0%
Spec Occasion	2	3	5	60.0%
TBD	5	4	9	44.4%
Visual Merchandise	0	2	2	100.0%
Women's Active	0	3	3	100.0%

Table 2, continued

Women's Shoes	10	10	20	50.0%
Dept Manager	12	24	36	66.7%
St John	0	1	1	100.0%
Logistics	2	0	2	0.0%
Sales vs. Support departments				
support	59	37	96	38.5%
sales	129	143	272	52.6%
General Department				
adult shoes	27	32	59	54.2%
children's	11	8	19	42.1%
women's	37	39	76	51.3%
Men's	9	7	16	43.8%
cosmetics	28	20	48	41.7%
support	59	37	96	38.5%
accessories	8	17	25	68.0%
dept manager	9	20	29	69.0%
Department Manager versus Employee				
Employee	172	156	328	47.6%
Department Manager	16	24	40	60.0%

Table 3: Reliability Analysis for Scale Items

Variable	Item	Mean	Std. Deviation	Cronbach's Alpha
Performance (self report)	How would you rate the quantity of your work productivity?	4.22	0.63	0.81
	How would you rate the quality of your work productivity?			
	How would you rate the accuracy of your work?			
	How would you rate the customer service that you provide?			
Commitment	I really feel as if my organization's problems are my own.	3.56	0.78	0.84
	I feel a strong sense of belonging to my organization.			
	I do not feel "emotionally attached" to my organization.			
	I feel like "part of the family" at my organization.			
	My organization has a great deal of personal meaning to me.			
	I would be happy to spend the rest of my career with my organization.			
Leader General Information sharing	My department manager gives general guidance about how to do my job.	4.13	0.69	0.87
	My department manager provides information about the vision of the organization.			
Leader Specific Information Sharing	My department manager tells me details about how to do my job	2.91	0.81	0.83
	When it comes to my work, my department manager gives me specific instructions on how to carry it out.			

Table 3, Continued

	I have enough confidence in my department manager that I would defend and justify his/her decision if he/she were not present to do so.			
	Do you know where you stand with your department manager… Do you usually know how satisfied your department manager is with what you do?			
	How well does your department manager understand your job problems and needs?			
	How well does your department manager recognize your potential?			
	Regardless of how much formal authority he/she has built into his/her position what are the chances that your department manager would use his/ her power to help you solve problems in your work?			
	Again, regardless of the amount of formal authority your department manager has, what are the chances that he/she would "bail you out," at his/ her expense			
LMX	How would you characterize your working relationship with your department manager?	3.76	0.89	0.93
	Do you know where you stand with this your coworker… Do you usually know how satisfied your coworker is with what you do?			
	How well does your coworker understand your job problems and needs?			
	What are the chances that your coworker would use his/her power to help you solve problems at work?			
	What are the chances that your coworker would "bail you out" at his/her own expense?			
	I have enough confidence in my coworker that I would defend his/her decision if he/she were not present to do so.			
CWX	How would you characterize your working relationship with your coworker?	3.64	0.74	0.90

Table 3, continued

Strength of coworker relationships	How close do you consider your relationship with this coworker? During the past year how often have you sought any type of advice from this person? During the past year how often have you sought information or work related advice from this person?	3.50	0.67	0.95
Power of coworkers	How much informal influence does this person have in your organization? How much power does this person have in your organization?	2.56	0.98	0.88
Coworker Specific Information Sharing	My coworker helps me with the details of how to do my job. When it comes to my work, my coworker gives me specific instructions about how to carry it out.	3.38	0.76	0.88
Coworker General Information Sharing	My coworker provides information about the vision of the organization. My coworker gives general guidance about how to do my job.	2.98	0.66	0.84

Table 4: Means, Standard Deviations, and Intercorrelations of Study Variables

		Mean	Standard Deviation	1	2	3	4	5	6	7	8
1	Sales per Hour	**141.95**	**57.90**	1.00							
2	Self Report Performance	**4.22**	**0.63**	-0.09	1.00						
3	Commitment	**3.56**	**0.78**	0.07	0.00	1.00					
4	Job Level (0=employee, 1=manager)	**0.13**	**0.34**	-0.36**	0.05	0.07	1.00				
5	Organizational Tenure	**27.43**	**30.55**	-0.11	-0.02	0.03	0.31*	1.00			
6	Job Tenure	**15.87**	**22.20**	-0.01	0.05	0.00	0.06	0.58**	1.00		
7	Leader Tenure	**12.31**	**12.01**	-0.11	0.04	-0.03	0.36*	0.56**	0.46**	1.00	
8	Gender (0=male, 1=female)	**0.74**	**0.44**	-0.01	-0.05	-0.06	0.04	-0.02	-0.11	0.04	1.00
9	hours/wk	**40.01**	**12.70**	-0.10	-0.08	0.10	0.41**	0.22**	0.05	0.17*	-0.03
10	Ethnicity	**1.78**	**1.62**	0.14	0.03	0.12	-0.12	-0.03	-0.05	-0.06	-0.15*
11	Age	**2.64**	**1.07**	-0.02	-0.15*	0.01	0.05	0.28**	0.31**	0.11	-0.12"
12	Organizational Identification	**4.41**	**1.85**	0.06	0.01	0.52**	0.08	0.14	0.15*	-0.02	0.00
13	Work group identification	**5.07**	**1.85**	0.00	0.04	0.47**	0.17	0.14	0.15*	0.07	-0.02
14	Specific information sharing by the leader	**2.91**	**0.81**	0.07	-0.17*	0.02	-0.14	-0.23**	-0.18*	-0.20**	0.02
15	General information sharing by the leader	**4.13**	**0.69**	0.10	-0.06	0.10	-0.05	-0.18*	-0.06	-0.15*	0.00
16	LMX	**3.76**	**0.88**	0.19*	-0.16*	0.26**	-0.04	-0.03	-0.02	-0.13	0.05
17	Average Strength of ties	**3.50**	**0.67**	-0.01	0.04	0.29**	-0.06	-0.08	0.02	-0.08	0.12

*Significance: * = p< .05, ** = p< .01*

Table 4, continued

		Mean	Standard Deviation	1	2	3	4	5	6	7	8
18	Heterogeneity in Strength of ties	**0.58**	**0.55**	-0.03	0.02	-0.11	0.11	-0.01	-0.03	0.02	0.02
19	Average CWX	**3.64**	**0.74**	0.01	0.07	0.26**	-0.12	-0.17*	-0.02	-0.10	0.10
20	Heterogeneity in CWX	**0.42**	**0.42**	0.03	-0.05	-0.03	0.08	0.00	0.02	0.02	-0.02
21	Average Power	**2.56**	**0.98**	0.11	0.05	0.22**	0.00	-0.14	-0.11	-0.17*	0.06
22	Average general information sharing from ties	**2.98**	**0.66**	-0.01	0.09	0.21**	0.08	-0.05	-0.10	-0.06	0.05
23	Average specific information sharing from ties	**3.38**	**0.76**	0.04	0.05	0.22**	-0.11	-0.17*	-0.20*	-0.23**	0.02
24	Degree centrality: mentor ties	**2.57**	**2.23**	0.07	-0.05	0.21**	0.25**	0.06	0.08	0.06	-0.01
25	Degree centrality: friendship ties	**5.34**	**3.91**	0.24**	-0.02	0.16*	0.02	0.05	0.14	-0.01	0.06
26	Degree centrality: important ties	**7.20**	**5.17**	0.29**	0.04	0.11	0.28**	0.17*	0.14	0.14	0.09
27	Betweenness: Mentor ties	**142.54**	**391.19**	0.05	0.09	-0.02	0.40**	0.12	0.06	0.15*	0.08
28	Betweenenss: Friendship ties	**407.50**	**1088.10**	0.03	0.04	0.05	0.32**	0.05	0.01	0.10	0.00
29	Betweeness: important ties	**386.04**	**1155.13**	0.08	0.05	0.04	0.28**	0.00	-0.04	0.06	0.01
30	Eigen Power: mentor ties	**0.02**	**0.07**	-0.14*	0.03	-0.02	**0.82****	0.01	0.00	0.15*	0.11
31	Eigen Power: Friendship ties	**0.02**	**0.07**	0.02	0.04	0.05	-0.10	0.00	0.08	0.00	-0.09
32	Eigen Power: Important ties	**0.02**	**0.06**	-0.28**	0.06	0.05	**0.86****	0.28**	0.08	0.32**	0.12
33	Density: mentor ties	**0.24**	**0.36**	0.00	0.01	0.15*	-0.15*	-0.11	-0.08	-0.11	-0.10
34	Density: friendship ties	**0.45**	**0.36**	-0.01	-0.04	0.15*	-0.25**	-0.08	-0.04	-0.08	0.03
35	Density: important ties	**0.53**	**0.33**	-0.09	-0.05	0.07	-0.15*	-0.05	-0.08	-0.12	0.03

*Significance: * = p< .05, ** = p< .01*

Table 4, continued

		9	10	11	12	13	14	15	16	17
1	Sales per Hour									
2	Self Report Performance									
3	Commitment									
4	Job Level (0=employee, 1=manager)									
5	Organizational Tenure									
6	Job Tenure									
7	Leader Tenure									
8	Gender (0=male, 1=female)									
9	hours/wk	1.00								
10	Ethnicity	0.08	1.00							
11	Age	0.07	-0.12	1.00						
12	Organizational Identification	0.09	0.01	0.13	1.00					
13	Work group identification	0.17*	0.09	0.03	0.71**	1.00				
14	Specific information sharing by the leader	0.02	-0.02	-0.13	-0.09	-0.06	1.00			
15	General information sharing by the leader	-0.02	-0.11	-0.09	0.16*	0.16*	0.19*	1.00		
16	LMX	-0.02	-0.04	0.04	0.23**	0.23**	0.17*	**0.63****	1.00	
17	Average Strength of ties	-0.02	-0.03	-0.02	0.21**	0.27**	0.13	0.14	0.24**	1.00

*Significance: * = p< .05, ** = p< .01*

Table 4, continued

		9	10	11	12	13	14	15	16	17
18	Heterogeneity in Strength of ties	0.06	0.16*	-0.05	-0.03	0.00	-0.06	0.00	-0.14	-0.43**
19	Average CWX	-0.10	-0.09	-0.10	0.15*	0.27**	0.09	0.19*	0.29**	0.72**
20	Heterogeneity in CWX	0.03	0.11	-0.05	-0.06	0.00	-0.02	0.04	-0.10	-0.32**
21	Average Power	0.02	0.05	-0.10	0.19**	0.20**	0.01	0.14	0.19*	0.48**
22	Average general information sharing from ties	-0.06	-0.10	-0.08	0.16	0.09	0.08	0.16*	0.22**	0.47**
23	Average specific information sharing from ties	-0.05	0.03	-0.10	0.07	0.11	0.20*	0.22**	0.21**	0.59**
24	Degree centrality: mentor ties	0.18	0.10	-0.04	0.10	0.21**	0.00	0.00	0.14	0.06
25	Degree centrality: friendship ties	0.00	0.04	-0.06	0.13	0.23**	-0.06	-0.04	0.06	0.03
26	Degree centrality: important ties	0.15*	0.05	-0.03	0.14	0.22**	-0.11	-0.06	0.08	-0.07
27	Betweenness: Mentor ties	0.18*	-0.02	0.04	0.08	0.10	-0.13	-0.09	0.04	-0.10
28	Betweenenss: Friendship ties	0.28**	0.01	0.04	0.17*	0.23**	-0.16*	-0.03	0.10	-0.07
29	Betweeness: important ties	0.25**	0.02	0.00	0.13	0.17*	-0.16*	-0.01	0.13	-0.06
30	Eigen Power: mentor ties	0.01	-0.06	-0.09	-0.12	-0.05	0.01	0.16*	0.15*	-0.05
31	Eigen Power: Friendship ties	0.04	0.17*	-0.02	-0.04	-0.03	-0.07	-0.12	-0.14	-0.09
32	Eigen Power: Important ties	0.38**	-0.10	0.04	0.12	0.16*	-0.19*	-0.03	0.03	-0.12
33	Density: mentor ties	-0.07	0.07	-0.19*	0.05	0.10	0.13	0.19*	0.14	0.07
34	Density: friendship ties	-0.15*	0.14	-0.11	-0.11	-0.06	0.14	-0.07	-0.03	0.22**
35	Density: important ties	-0.07	0.03	-0.11	-0.04	-0.05	0.12	-0.06	-0.07	0.08

*Significance: * = p< .05, ** = p< .01*

Table 4, Continued

		18	19	20	21	22	23	24	25	26
18	Heterogeneity in Strength of ties	1.00								
19	Average CWX	-0.27**	1.00							
20	Heterogeneity in CWX	**0.64****	-0.26**	1.00						
21	Average Power	-0.05	0.50**	-0.13	1.00					
22	Average general information sharing from ties	-0.09	0.49**	-0.06	0.55**	1.00				
23	Average specific information sharing from ties	-0.10	0.51**	-0.15	0.56**	0.55**	1.00			
24	Degree centrality: mentor ties	0.14	0.13	0.12	0.11	0.07	0.10	1.00		
25	Degree centrality: friendship ties	0.15	0.11	0.18*	0.12	0.09	-0.05	0.51**	1.00	
26	Degree centrality: important ties	0.23**	0.02	0.18*	0.07	0.02	-0.12	0.56**	**0.70****	1.00
27	Betweenness: Mentor ties	0.22**	-0.04	0.18*	0.04	0.06	-0.10	0.43**	0.28**	0.42
28	Betweenenss: Friendship ties	0.14	0.02	0.16*	0.03	0.05	-0.11	0.28**	0.38**	0.36**
29	Betweeness: important ties	0.11	0.02	0.10	0.04	0.00	-0.14	0.21**	0.21**	0.43
30	Eigen Power: mentor ties	0.22**	-0.03	0.22**	0.01	0.06	-0.01	0.41**	0.28**	0.30
31	Eigen Power: Friendship ties	0.07	-0.09	0.13	-0.05	-0.05	-0.11	0.05	0.28**	0.25
32	Eigen Power: Important ties	0.18*	-0.11	0.12	0.00	0.00	-0.16*	0.26**	0.07	0.49**
33	Density: mentor ties	0.12	0.22**	0.04	0.14	0.06	0.20*	0.20*	0.14	0.12
34	Density: friendship ties	0.01	0.18*	0.05	0.14	0.07	0.34**	0.04	-0.01	-0.09
35	Density: important ties	-0.08	0.05	-0.03	0.09	0.01	0.14	-0.10	-0.10	-0.20**

*Significance: * = p< .05, ** = p< .01*

Table 4, continued

		27	28	29	30	31	32	33	34	35
1	Heterogeneity in Strength of ties									
2	Average CWX									
3	Heterogeneity in CWX									
4	Average Power									
22	Average general information sharing from ties									
23	Average specific information sharing from ties									
24	Degree centrality: mentor ties									
25	Degree centrality: friendship ties									
26	Degree centrality: important ties									
27	Betweenness: Mentor ties	1.00								
28	Betweenenss: Friendship ties	**0.76****	1.00							
29	Betweeness: important ties	**0.67****	**0.85****	1.00						
30	Eigen Power: mentor ties	0.30**	0.25**	0.25**	1.00					
31	Eigen Power: Friendship ties	0.07	0.14	0.13	-0.08	1.00				
32	Eigen Power: Important ties	0.47**	0.38**	0.42**	0.25**	-0.09	1.00			
33	Density: mentor ties	-0.11	-0.09	-0.04	0.17*	-0.05	-0.08	1.00		
34	Density: friendship ties	-0.21**	-0.23**	-0.20*	-0.03	0.04	-0.28**	0.43**	1.00	
35	Density: important ties	-0.26**	-0.23**	-0.22**	-0.13	0.03	-0.19*	0.33**	**0.70****	1.00

*Significance: * = p< .05, ** = p< .01*

Table 5: Power Calculations

DV	Model	Respondents	Sample Size	# of Predictors	Power (effect size .15)	Power (effect size .35)	F-Statistic
Commit–ment	Basic Model	all	180	19	0.85	0.98	F(19,160) = 1.65
	Basic + Identification controls	all	180	21	0.86	0.98	F(21,158) = 1.62
	Basic Model	Sales Employees only	123	18	0.67	0.97	F(18,104) = 1.70
	Basic + Identification controls	Sales Employees only	123	20	0.64	0.96	F(20, 102) = 1.674
Sales & Perform-ance	Basic Model	all	180	19	0.85	0.98	F(19,160) = 1.65
	Basic + Information Sharing Controls	all	180	23	0.84	0.98	F(23, 156) = 1.59
	Basic Model	Sales Employees only	123	18	0.67	0.97	F(18,104) = 1.70
	Basic + Information Sharing Controls	Sales Employees only	123	22	0.62	0.97	F(22, 100) = 1.65

Table 6: Estimation of Baseline Social Exchange Model and CWX Heterogeneity on Sales per hour

Hierarchical Regression Baseline Model Dependent Variable = Sales per Hour (first line sales employees only, N = 123)					
	Step 1	Step 2	Step 3	Step 4	Step 5
Organization Tenure	-0.19	-0.12	-0.20	-0.20	-0.20
	(.21)	(.22)	(.21)	(.21)	(.21)
Job Tenure	0.16	-0.01	0.17	0.16	0.17
	(.28)	(.3)	(.28)	(.28)	(.28)
Leader Tenure	-0.53	0.08	-0.35	-0.36	-0.36
	(.53)	(.76)	(.53)	(.53)	(.53)
gender	7.47	5.24	8.49	8.43	6.89
	(12.26)	(13.19)	(12.08)	(12.12)	(12.31)
Hours per week	-0.39	-0.22	-0.42	-0.43	-0.44
	(.39)	(.48)	(.39)	(.39)	(.39)
Ethnicity	2.68	0.29	2.68	2.55	2.33
	(2.95)	(3.07)	(2.9)	(2.92)	(2.94)
Age	2.01	1.67	1.37	1.39	0.91
	(5.18)	(5.65)	(5.11)	(5.12)	(5.17)
LMX			12.90**	13.13**	13.30**
			(5.87)	(5.9)	(5.91)
CWX Heterogeneity		11.57		7.06	7.48
		(13.89)		(12.65)	(12.68)
LMX x CWX Heterogeneity					11.26
					(14.95)
R^2	0.01	0.02	0.07	0.08	0.10
F	0.13	0.20	0.94	0.96	1.12
change R^2	0.01	0.01	0.06	0.01	0.02
change F	0.13	0.69	6.62*	1.07	2.43

*Significance: * = p< .05, ** = p< .01*

Table 7: Estimation of Baseline Social Exchange Model and Average CWX on Sales per hour

Hierarchical Regression Baseline Model Dependent Variable = Sales per Hour (first line sales employees only, N = 123)	Step 1	Step 2	Step 3	Step 4	Step 5
Organization Tenure	-0.19	-0.12	-0.20	-0.20	-0.20
	(.21)	(.22)	(.21)	(.21)	(.21)
Job Tenure	0.16	-0.01	0.17	0.16	0.17
	(.28)	(.30)	(.28)	(.28)	(.28)
Leader Tenure	-0.53	0.08	-0.35	-0.36	-0.36
	(.53)	(.76)	(.53)	(.53)	(.53)
Gender	7.47	5.24	8.49	8.43	6.89
	(12.26)	(13.19)	(12.08)	(12.12)	(12.31)
Hours per week	-0.39	-0.22	-0.42	-0.43	-0.44
	(.39)	(.48)	(.39)	(.39)	(.39)
Ethnicity	2.68	0.29	2.68	2.55	2.33
	(2.95)	(3.07)	(2.9)	(2.92)	(2.94)
Age	2.01	1.67	1.37	1.39	0.91
	(5.18)	(5.65)	(5.11)	(5.12)	(5.17)
LMX			12.90**	13.13**	13.30**
			(5.87)	(5.9)	(5.91)
CWX Mean		-3.41		-8.60	-9.29
		(7.55)		(7.62)	(7.72)
LMX x CWX Mean					-5.61
					(8.89)
R^2	0.01	0.01	0.07	0.07	0.07
F	0.13	0.16	0.87	0.92	0.86
change R^2	0.01	0.00	0.06	0.01	0.00
change F	0.13	0.65	5.82*	1.28	0.40

*Significance: * = p< .05, ** = p< .01*

Table 8: Estimation of Baseline Social Exchange Model and CWX Heterogeneity on Self Report Performance

Hierarchical Regression Baseline Model Dependent Variable = Self Report Performance (All respondents, N = 180)	Step 1	Step 2	Step 3	Step 4	Step 5
Organization Tenure	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Job Tenure	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leader Tenure	0.00	0.00	0.00	0.00	0.00
	(.01)	(.01)	(.01)	(.01)	(.01)
Gender	-0.04	-0.04	-0.03	-0.03	-0.06
	(.12)	(.12)	(.12)	(.12)	(.12)
Hours per week	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Ethnicity	0.00	0.00	0.00	0.00	0.00
	(.03)	(.03)	(.03)	(.03)	(.03)
Age	-0.08	-0.08	-0.08	-0.08	-0.09
	(.05)	(.05)	(.05)	(.05)	(.05)
LMX			-0.04	-0.05	-0.06
			(.06)	(.06)	(.06)
CWX Heterogeneity		-0.08		-0.09	-0.10
		(.12)		(.12)	(.12)
LMX x CWX Heterogeneity					0.18
					(.13)
R^2	0.03	0.03	0.03	0.04	0.05
F	0.67	0.64	0.66	0.65	0.77
change R^2	0.03	0.00	0.00	0.00	0.01
change F	0.67	0.46	0.59	0.61	1.78

*Significance: * = p< .05, ** = p< .01*

Table 9: Estimation of Baseline Social Exchange Model and Average CWX on Self Report Performance

Hierarchical Regression Baseline Model Dependent Variable = Self Report Performance (All respondents, N = 180)	Step 1	Step 2	Step 3	Step 4	Step 5
Organization Tenure	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Job Tenure	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leader Tenure	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Gender	-0.07	-0.08	-0.06	-0.07	-0.06
	(.11)	(.11)	(.11)	(.11)	(.11)
Hours per week	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Ethnicity	0.00	0.00	0.00	0.00	0.00
	(.03)	(.03)	(.03)	(.03)	(.03)
Age	-0.08	-0.07	-0.07	-0.07	-0.07
	(.05)	(.05)	(.05)	(.05)	(.05)
LMX			-0.06	-0.08	-0.08
			(.05)	(.06)	(.06)
CWX Mean		0.05		0.07	0.08
		(.07)		(.07)	(.07)
LMX x CWX Mean					0.01
					(.08)
R^2	0.03	0.03	0.04	0.05	0.05
F	0.76	0.72	0.85	0.89	0.80
change R^2	0.03	0.00	0.01	0.01	0.00
change F	0.76	0.48	1.47	1.19	0.02

*Significance: * = p< .05, ** = p< .01*

Table 10: Estimation of Baseline Social Exchange Model and Average CWX on Commitment

Hierarchical Regression Baseline Model Dependent Variable = Commitment (All respondents, N = 180)					
	Step 1	Step 2	Step 2	Step 3	Step 4
Organization Tenure	0.00	0.002	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Job Tenure	0.00	-0.003	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leader Tenure	-0.01	-0.004	0.00	0.00	0.00
	(.01)	(.01)	(.01)	(.01)	(.01)
Gender	-0.02	-0.075	-0.06	-0.10	-0.11
	(.14)	(.13)	(.14)	(.13)	(.13)
Hours per week	0.01	0.007	0.01	0.01	0.01
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Ethnicity	0.04	0.047	0.04	0.05	0.04
	(.04)	(.04)	(.04)	(.03)	(.04)
Age	0.06	0.071	0.05	0.06	0.06
	(.06)	(.06)	(.06)	(.06)	(.06)
LMX			0.22**	0.16**	0.16**
			(.06)	(.07)	(.07)
CWX		0.31**		0.26**	0.24**
		(.08)		(.08)	(.08)
LMX x CWX					-0.06
					(.09)
R^2	0.03	0.11	0.09	0.14	0.15
F	0.67	2.61*	2.07*	3.05*	2.79*
change R^2	0.03	0.09	0.06	0.05	0.00
change F	0.67	15.83**	11.63**	9.97**	0.47

*Significance: * = p< .05, ** = p< .01*

Table 11: Test of Leader and Coworker Information Sharing

One-Sample Paired T-Statistics						
	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Coworker General Information Sharing	173	2.98	0.66	17.05	179	0.00
Coworker Specific Information Sharing	173	**3.38**	0.76			
Leader General Information Sharing	180	**4.13**	0.69	-7.87	172	0.00
Leader Specific Information Sharing	180	2.91	0.81			

Table 12: Estimation of control variables on Sales per Hour and Self Report Performance

Regression: Control Variables (First Line Employees only, N = 123)		
Variable	DV = Sales per hour	DV = Self Report Performance
Organization Tenure	-0.11	0.00
	(.22)	(0.00)
Job Tenure	0.02	0.00
	(.30)	(0.00)
Leader Tenure	0.60	0.00
	(.77)	(0.00)
gender	6.24	-0.06
	(13.64)	(.11)
Hours per week	-0.16	0.00
	(.49)	(0.00)
ethnicity	1.24	0.00
	(3.13)	(.03)
age	2.78	-0.08
	(5.73)	(.05)
Leader Specific Information sharing	-2.93	-0.10
	(7.03)	(.06)
Leader General Information Sharing	11.85	-0.05
	(8.26)	(.07)
Coworker General Information Sharing	2.64	0.08
	(10.64)	(.09)
Coworker Specific Information Sharing	-1.30	0.04
	(8.98)	(.08)
Level		0.17
		(.16)
R^2	0.03	0.08
F	0.33	1.23
change R^2	0.03	0.08
change F	0.33	1.23

*Significance: * = p< .05, ** = p< .01*

Table 13: Estimation of full models in the Important Coworker Network and Advice Network on Self Report Performance

Hierarchical Regression
Dependent Variable = Self Report Performance
All Respondents (N = 180)

	Important Coworker Network					Advice Network				
	Step 1	Step 2	Step 3	Step 4	Step 5	Step 1	Step 2	Step 3	Step 4	Step 5
Organization Tenure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Job Tenure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leader Tenure	0.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00	0.00	0.00
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Gender	-0.03	-0.06	-0.02	-0.03	-0.04	-0.03	-0.07	-0.02	-0.04	-0.04
	(.11)	(.12)	(.11)	(.12)	(.12)	(.11)	(.12)	(.11)	(.12)	(.12)
Hours per week	0.00	-0.01	0.00	-0.01	-0.01	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Ethnicity	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.01
	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)
Age	-0.09	-0.09	-0.09	-0.09	-0.08	-0.09	-0.09	-0.09	-0.09	-0.09
	(.05)	(.05)	(.05)	(.05)	(.05)	(.05)	(.05)	(.05)	(.05)	(.05)
LMX			-0.05	-0.06	-0.10			-0.05	-0.05	-0.05
			(.06)	(.06)	(.06)			(.06)	(.06)	(.06)
Strength Mean		0.08		0.09	0.10		0.10		0.10	0.10
		(.09)		(.07)	(.08)		(.09)		(.07)	(.08)
Strength Variance		0.04		-0.01	-0.03		0.04		-0.03	-0.03
		(.10)		(.09)	(.10)		(.11)		(.10)	(.10)

*Significance: * = p< .05, ** = p< .01*

Table 13, Continued

Degree centrality		0.00		0.00	0.00		-0.04		-0.04	-0.03
		(.01)		(.01)	(.01)		(.03)		(.03)	(.03)
Power		1.61		1.58	2.09		0.49		0.57	-0.19
		(1.07)		(1.07)	(1.22)		(.81)		(.82)	(1.26)
Density		0.00		-0.03	-0.03		0.01		0.04	0.02
		(.17)		(.18)	(.18)		(.14)		(.14)	(.14)
Betweeness		0.00		0.00	0.00		0.00		0.00	0.00
		(0.00)		(0.00)	(0.00)		(0.00)		(0.00)	(0.00)
LMX x Strength Mean					-0.02					-0.04
					(.08)					(.08)
LMX x Strength Variance					-0.08					-0.10
					(.11)					(.11)
LMX x Degree centrality					0.01					0.00
					(.02)					(.03)
LMX x Power					-2.12					1.12
					(1.42)					(1.55)
LMX x Density					0.28					0.14
					(.23)					(.15)
LMX x Betweenenss					0.00					0.00
					(0.00)					(0.00)
R^2	0.04	0.07	0.04	0.07	0.10	0.04	0.08	0.04	0.08	0.10
F	0.84	0.81	0.82	0.82	0.91	0.84	0.97	0.82	0.93	0.87
change R^2	0.04	0.03	0.01	0.03	0.04	0.04	0.04	0.01	0.03	0.02
change F	0.84	0.78	0.75	0.82	1.15	0.84	1.12	0.75	1.10	0.74

*Significance: * = p< .05, ** = p< .01*

Table 14: Estimation of full models in the Important Coworker Network and Advice Network on Sales per Hour

Hierarchical Regression
Dependent Variable = Sales per hour
First Line Sales employees only (N=123)

	Important Coworker Network					Advice (Mentor) Network				
	Step 1	Step 2	Step 3	Step 4	Step 5	Step 1	Step 2	Step 3	Step 4	Step 5
Organization Tenure	-0.15	-0.22	-0.14	-0.25	-0.22	-0.15	-0.15	-0.14	-0.15	-0.10
	(.21)	(.21)	(.21)	(.20)	(.19)	(.21)	(.22)	(.21)	(.21)	(.21)
Job Tenure	0.02	-0.21	0.04	-0.22	-0.13	0.02	-0.14	0.04	-0.08	-0.16
	(.30)	(.30)	(.29)	(.28)	(.27)	(.30)	(.31)	(.29)	(.30)	(.31)
Leader Tenure	0.44	0.20	0.64	0.59	0.42	0.44	0.16	0.64	0.29	0.31
	(.74)	(.74)	(.73)	(.69)	(.67)	(.74)	(.76)	(.73)	(.74)	(.75)
Gender	2.58	-4.94	4.99	-2.21	4.26	2.58	-0.49	4.99	5.70	6.59
	(13.11)	(14.13)	(12.88)	(13.08)	(12.88)	(13.11)	(13.85)	(12.88)	(13.58)	(13.81)
Hours per week	-0.14	-0.19	-0.10	-0.06	-0.30	-0.14	-0.27	-0.10	-0.24	-0.32
	(.47)	(.46)	(.46)	(.44)	(.43)	(.47)	(.49)	(.46)	(.47)	(.47)
Ethnicity	0.77	0.29	0.71	0.16	0.57	0.77	-0.08	0.71	-0.35	-0.69
	(3.05)	(2.93)	(2.98)	(2.74)	(2.66)	(3.05)	(3.13)	(2.98)	(3.03)	(3.22)
Age	2.47	-0.50	1.73	1.15	-2.90	2.47	-1.53	1.73	-2.32	-5.24
	(5.51)	(5.4)	(5.4)	(5.03)	(5.05)	(5.51)	(5.69)	(5.4)	(5.51)	(5.77)
LMX			14.46*	15.04*	15.82*			14.46*	17.65**	77.21
			(6.11)	(5.89)	(6.36)			(6.11)	(6.41)	(49.5)

*Significance: * = p< .05, ** = p< .01*

Table 14, continued

Strength Heterogeneity	-5.14	-2.18	2.84	4.46	7.24	8.09
	(12.27)	(11.91)	(12.05)	(12.75)	(12.37)	(13.31)
Strength Mean	-4.08	-6.05	-2.91	-3.13	-9.84	-7.11
	(9.74)	(8.73)	(8.42)	(10.49)	(10.43)	(11.45)
Degree centrality	3.55**	3.94**	4.31**	2.35	3.16	4.75
	(1.35)	(1.21)	(1.18)	(2.93)	(2.85)	(3.06)
Power	1975.14**	1629.98	1073.63	4079.38**	3612.23*	2454.32
	(999.61)	(947.97)	(918.55)	(1858.79)	(1805.44)	(2248.61)
Density	-5.72	-1.79	-9.34	-19.35	-21.81	-21.82
	(19.26)	(15.72)	(15.45)	(15.29)	(14.82)	(14.96)
Betweeness	0.00	0.00	0.00	0.00	-0.01	0.01
	(.01)	(.01)	(.01)	(.03)	(.03)	(.04)
LMX x Strength Variance			-1.83			6.36
			(13.45)			(16.57)
LMX x Strength Mean			3.15			2.86
			(9.66)			(13.21)
LMX x Degree centrality			2.49*			6.51*
			(1.34)			(3.31)
LMX x Power			747.56			3798.24
			(1021.08)			(3068.33)
LMX x Density			-41.22*			-2.31
			(19.54)			(16.98)

*Significance: * = p< .05, ** = p< .01*

Table 14, continued

LMX x Betweenenss					-0.01 (.01)					-0.04 (.06)
R^2	0.01	0.20	0.05	0.24	0.35	0.01	0.11	0.05	0.16	0.23
F	0.15	1.84*	0.71	2.50**	2.97**	0.15	0.91	0.71	1.36	1.46*
change R^2	0.01	0.19	0.04	0.19	0.11	0.01	0.10	0.04	0.10	0.06
change F	0.15	3.80**	4.73*	5.11**	3.41**	0.15	1.82	4.73*	2.18	3.62*

*Significance: * = p< .05, ** = p< .01*

Table 15: Estimation of Simplified Model of Average Strength of Ties in the Advice Network on Sales per Hour

Hierarchical Regression Simplified Model - Strength Mean Dependent Variable = Sales per hour (First Line Sales Employees only, N=123)					
	Step 1	Step 2	Step 3	Step 4	Step 5
Organization Tenure	-0.15	-0.17	-0.15	-0.18	-0.18
	(.21)	(.22)	(.21)	(.21)	(.21)
Job Tenure	0.02	0.05	0.03	0.09	0.09
	(.3)	(.3)	(.29)	(.3)	(.3)
Leader Tenure	0.44	0.39	0.63	0.57	0.57
	(.74)	(.75)	(.73)	(.73)	(.74)
gender	2.58	4.32	3.36	6.95	7.24
	(13.11)	(13.44)	(12.9)	(13.2)	(13.5)
Hours per week	-0.14	-0.11	-0.11	-0.05	-0.05
	(.47)	(.48)	(.47)	(.47)	(.47)
ethnicity	0.77	0.80	0.68	0.72	0.79
	(3.05)	(3.06)	(3.)	(2.99)	(3.05)
age	2.47	2.23	1.94	1.38	1.47
	(5.51)	(5.53)	(5.42)	(5.43)	(5.5)
LMX			12.95*	14.91*	14.77*
			(5.94)	(6.17)	(6.31)
Strength Mean		-5.78		-11.54	-11.44
		(9.33)		(9.43)	(9.52)
LMX x Strength Mean					1.20
					(10.57)
R^2	0.01	0.01	0.05	0.06	0.07
F	0.15	0.18	0.73	0.83	0.81
change R^2	0.01	0.00	0.04	0.01	0.00
change F	0.15	0.38	4.73*	1.50	0.01

*Significance: * = p< .05, ** = p< .01*

Table 16: Estimation of simplified model of Average Strength of Ties in the Advice Network on Sales per Hour

Hierarchical Regression Simple Model - Strength Heterogeneity
Dependent Variable = Sales per hour
(First Line Sales employees only, N= 123)

	Step 1	Step 2	Step 3	Step 4	Step 5
Organization Tenure	-0.12	-0.12	-0.13	-0.12	-0.11
	(.22)	(.22)	(.21)	(.21)	(.21)
Job Tenure	0.02	0.01	0.03	0.01	0.02
	(.3)	(.3)	(.3)	(.3)	(.3)
Leader Tenure	0.10	-0.03	0.33	0.22	0.19
	(.76)	(.77)	(.75)	(.76)	(.76)
gender	5.29	5.89	6.27	6.21	5.53
	(13.29)	(13.28)	(13.01)	(13.01)	(13.06)
Hours per week	-0.27	-0.28	-0.27	-0.28	-0.28
	(.48)	(.48)	(.47)	(.47)	(.47)
ethnicity	0.54	0.01	0.43	-0.26	-0.98
	(3.07)	(3.1)	(3.01)	(3.08)	(3.21)
age	1.19	0.96	0.65	0.73	0.39
	(5.74)	(5.73)	(5.62)	(5.62)	(5.64)
LMX			12.95*	15.47*	15.85*
			(5.94)	(6.23)	(6.26)
Strength Heterogeneity		0.54		12.21	12.65
		(.47)		(12.09)	(12.12)
LMX x Strength Heterogeneity					11.71
					(14.36)
R^2	0.01	0.02	0.05	0.07	0.08
F	0.15	0.27	0.73	0.83	0.81
change R^2	0.01	0.01	0.05	0.01	0.01
change F	0.13	1.29	5.49*	1.02	0.67

*Significance: * = p< .05, ** = p< .01*

Table 17: Estimation of simplified model of Network Power in the Advice Network on Sales per Hour

Hierarchical Regression Simple Model - Advice Network Power Dependent Variable = Sales per hour (First Line Sales Employees only, N=123)					
	Step 1	Step 2	Step 3	Step 4	Step 5
Organization Tenure	-0.12	-0.16	-0.12	-0.16	-0.13
	(.21)	(.21)	(.21)	(.2)	(.2)
Job Tenure	0.07	-0.08	0.08	-0.06	-0.07
	(.3)	(.29)	(.29)	(.28)	(.28)
Leader Tenure	0.45	0.59	0.64	0.75	0.88
	(.73)	(.71)	(.72)	(.7)	(.7)
gender	0.78	-5.73	1.75	-4.49	-5.43
	(13.05)	(12.74)	(12.84)	(12.6)	(12.47)
Hours per week	-0.11	-0.06	-0.09	-0.04	-0.05
	(.47)	(.46)	(.46)	(.45)	(.44)
ethnicity	1.06	1.11	0.96	1.02	1.10
	(3.04)	(2.93)	(2.99)	(2.89)	(2.86)
age	0.80	-0.85	0.46	-1.05	-2.88
	(5.27)	(5.1)	(5.19)	(5.04)	(5.08)
LMX			12.95*	11.28*	63.87*
			(5.94)	(5.77)	(28.91)
Power		4670.77**		4388.66**	3919.50*
		(1491.32)		(1479.98)	(1485.62)
LMX x Power					3966.69*
					(1327.3)
R^2	0.01	0.09	0.05	0.12	0.15
F	0.12	1.96*	0.73	2.05*	2.30*
change R^2	0.01	0.08	0.04	0.07	0.03
change F	0.12	9.81**	4.75*	11.51**	4.30*

*Significance: * = p< .05, ** = p< .01*

Table 18: Estimation of simplified model of Network Density in the Advice Network on Sales per Hour

Hierarchical Regression Simple Model - Advice Network Density Dependent Variable = Sales (First Line Sales Employees Only (N=123)					
	Step 1	Step 2	Step 3	Step 4	Step 5
Organization Tenure	-0.12	-0.12	-0.12	-0.12	-0.10
	(.21)	(.21)	(0.21)	(0.21)	(0.20)
Job Tenure	0.07	0.11	0.08	0.11	0.15
	(0.30)	(.29)	(0.29)	(0.29)	(0.28)
Leader Tenure	0.45	0.47	0.64	0.64	0.55
	(0.73)	(.72)	(0.72)	(0.72)	(0.70)
gender	0.78	3.37	1.75	3.83	10.15
	(13.05)	(13.03)	(12.84)	(12.86)	(12.59)
Hours per week	-0.11	-0.14	-0.09	-0.12	-0.25
	(0.47)	(.47)	(0.46)	(0.46)	(0.45)
ethnicity	1.06	1.00	0.96	0.91	1.15
	(3.04)	(3.01)	(2.99)	(2.98)	(2.87)
age	0.80	-0.34	0.46	-0.47	-2.25
	(5.27)	(5.27)	(5.19)	(5.20)	(5.06)
LMX			12.95*	11.75*	18.18**
			(5.94)	(5.97)	(6.15)
Density		-27.24*		-22.89*	-24.45*
		(15.92)		(15.87)	(15.33)
LMX x Density					-53.48**
					(17.70)
R^2	0.01	0.03	0.05	0.14	0.17
F	0.12	0.48	0.73	0.86	1.95*
change R^2	0.01	0.02	0.04	0.07	0.14
change F	0.12	2.93*	4.75*	2.08	9.13**

*Significance: * = p< .05, ** = p< .01*

Table 19: Estimation of simplified model of Network Centrality in the Advice Network on Sales per Hour

Hierarchical Regression Simple Model - Advice Network Centrality Dependent Variable = Sales (First Line Sales Employees Only N=123)					
	Step 1	Step 2	Step 3	Step 4	Step 5
Organization Tenure	-0.12	-0.11	-0.12	-0.11	-0.09
	(.21)	(.21)	(.21)	(.21)	(.21)
Job Tenure	0.07	-0.02	0.08	-0.01	-0.03
	(.3)	(.3)	(.29)	(.3)	(.29)
Leader Tenure	0.45	0.43	0.64	0.62	0.54
	(.73)	(.73)	(.72)	(.72)	(.71)
gender	0.78	2.54	1.75	3.57	6.76
	(13.05)	(13.09)	(12.84)	(12.88)	(12.74)
Hours per week	-0.11	-0.15	-0.09	-0.13	-0.20
	(.47)	(.47)	(.46)	(.46)	(.46)
ethnicity	1.06	0.49	0.96	0.37	0.55
	(3.04)	(3.07)	(2.99)	(3.02)	(2.96)
age	0.80	1.18	0.46	0.85	-0.78
	(5.27)	(5.27)	(5.19)	(5.18)	(5.14)
LMX			12.95*	13.07*	13.50*
			(5.94)	(5.93)	(5.83)
Degree		3.36		3.46	5.28
		(2.71)		(2.67)	(2.74)
LMX x Degree					6.31*
					(2.83)
R^2	0.01	0.02	0.05	0.06	0.10
F	0.12	0.30	0.73	0.82	1.90*
change R^2	0.01	0.01	0.04	0.01	0.04
change F	0.12	1.54	4.75*	1.68	4.98*

*Significance: * = p< .05, ** = p< .01*

Table 20: Estimation of Control Variables on Commitment

Regression: Control Variables Dependent Variable = Commitment (All Respondents, N = 180)	Step 1
Organization Tenure	0.00
	(0.00)
Job Tenure	0.00
	(0.00)
Leader Tenure	0.00
	(0.01)
gender	-0.09
	(0.12)
Hours per week	0.00
	(0.00)
ethnicity	0.04
	(0.03)
age	-0.02
	(0.05)
Organizational Identification	0.17**
	(0.04)
Work Group Identification	0.07
	(0.04)
Level	0.06
	(0.18)
R^2	0.31
F	7.53**
change R^2	0.31
change F	7.53**

*Significance: * = p< .05, ** = p< .01*

Table 21: Estimation of Full Models in the Friendship Network on Commitment and a Simplified Model in the Friendship network excluding Identification Controls on Commitment

Hierarchical Regression
Dependent Variable = Commitment
All respondents (N=180)

	Friendship Network					Friendship Network				
	Step 1	Step 2	Step 3	Step 4	Step 5	Step 1	Step 2	Step 3	Step 4	Step 5
Organization Tenure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Job Tenure	0.00	-0.01	0.00	-0.01	-0.01	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leader Tenure	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	-0.01	0.00	-0.01
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
gender	-0.06	-0.12	-0.08	-0.14	-0.12	-0.02	-0.13	-0.08	-0.21	-0.13
	(.12)	(.12)	(.12)	(.12)	(.12)	(.15)	(.14)	(.15)	(.15)	(.15)
Hours per week	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(.01)	(0.00)	(.01)	(.01)	(.01)
ethnicity	0.04	0.02	0.04	0.02	0.02	0.05	0.03	0.05	0.04	0.03
	(.03)	(.03)	(.03)	(.03)	(.03)	(.04)	(.04)	(.04)	(.04)	(.04)
age	0.02	0.04	0.02	0.04	0.03	0.08	0.07	0.07	0.10	0.12
	(.05)	(.05)	(.05)	(.05)	(.05)	(.07)	(.06)	(.07)	(.07)	(.07)
organizational Identification	0.17**	0.18**	0.17**	0.18**	0.18**					
	(.04)	(.04)	(.04)	(.04)	(.04)					
work group Identification	0.07	0.05	0.06	0.04	0.03					
	(.04)	(.04)	(.04)	(.04)	(.04)					

*Significance: * = p< .05, ** = p< .01*

Table 21, continued

LMX		0.13*	0.12*	0.13*	0.22**	0.21**	0.14
		(.06)	(.06)	(.06)	(.07)	(.07)	(.1)
Degree centrality	0.02		0.02	0.02	0.03	0.04*	0.04*
	(.01)		(.01)	(.01)	(.02)	(.02)	(.02)
Density	0.33**		0.35*	0.34*	0.19	0.26	0.25
	(.15)		(.15)	(.15)	(.17)	(.18)	(.18)
Betweeness	0.65		0.00	0.00	0.24	0.00	0.00
	(.8)		(0.00)	(0.00)	(.92)	(0.00)	(0.00)
Power	0.00		0.83	2.41	0.00	0.76	2.72
	(.)		(.79)	(1.28)	(0.00)	(.95)	(1.67)
Strength Mean	0.17**		0.14*	0.16*	0.33**	0.24*	0.28*
	(.08)		(.08)	(.08)	(.09)	(.10)	(.10)
LMX x Degree centrality				0.01			0.01
				(.01)			(.02)
LMX x Density				0.05			0.22
				(.16)			(.19)
LMX x Betweenenss				0.00			0.00
				(0.00)			(0.00)
LMX x Power				2.68			4.01*
				(1.65)			(1.99)
LMX x Strength mean				-0.04			0.00
				(.08)			(.1)

*Significance: * = p< .05, ** = p< .01*

Table 21, continued

R^2	0.31	0.38	0.32	0.39	0.41	0.04	0.15	0.11	0.21	0.26
F	8.01**	6.84**	7.69**	6.78**	5.27**	0.87	2.33**	2.01*	2.74**	2.53**
change R^2	0.31	0.07	0.02	0.07	0.02	0.04	0.12	0.07	0.10	0.05
change F	8.01**	3.60**	3.70*	3.68**	0.85	0.87	4.52**	10.02**	3.53**	1.79

*Significance: * = p< .05, ** = p< .01*

Table 22: Estimation of simplified model of Average Strength of Ties in the Friendship Network on Commitment

Hierarchical Regression Simple Model - Strength Mean
Dependent Variable = Commitment
(All Respondents, N = 180)

	Step 1	Step 2	Step 3	Step 4	Step 5
Organization Tenure	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Job Tenure	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leader Tenure	0.00	0.00	0.00	0.00	0.00
	(.01)	(.01)	(.01)	(.01)	(.01)
gender	-0.06	-0.10	-0.08	-0.12	-0.13
	(.12)	(.12)	(.12)	(.12)	(.12)
Hours per week	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ethnicity	0.04	0.04	0.04	0.04	0.04
	(.03)	(.03)	(.03)	(.03)	(.03)
age	0.02	0.02	0.02	0.02	0.02
	(.05)	(.05)	(.05)	(.05)	(.05)
Organizational Identification	0.17**	0.17**	0.17**	0.17**	0.17**
	(.04)	(.04)	(.04)	(.04)	(.04)
Work Group Identification	0.07	0.05	0.06	0.04	0.04
	(.04)	(.04)	(.04)	(.04)	(.04)
LMX			0.12*	0.09	0.09
			(.06)	(.06)	(.06)
Strength Mean		0.21**		0.19*	0.18*
		(.08)		(.08)	(.08)
LMX x Strength Mean					-0.04
					(.08)
R^2	0.31	0.34	0.32	0.35	0.35
F	8.01**	8.20**	7.69**	7.72**	7.01**
change R^2	0.307	0.03	0.02	0.02	0.00
change F	8.01*	7.23**	3.70*	5.75*	0.24

*Significance: * = p< .05, ** = p< .01*

Table 23: Estimation of simplified model of Network Power in the Friendship Network on Commitment

Hierarchical Regression Simple Model - Friendship Network Power Dependent Variable = Commitment (All Respondents N=180)	Step 1	Step 2	Step 3	Step 4	Step 5
Organization Tenure	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Job Tenure	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leader Tenure	0.00	0.00	0.00	0.00	0.00
	(.01)	(.01)	(.01)	(.01)	(.01)
gender	-0.08	-0.07	-0.10	-0.09	-0.07
	(.12)	(.12)	(.12)	(.12)	(.12)
Hours per week	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ethnicity	0.04	0.04	0.04	0.04	0.03
	(.03)	(.03)	(.03)	(.03)	(.03)
age	0.00	0.00	-0.01	0.00	0.00
	(.05)	(.05)	(.05)	(.05)	(.05)
Organizational Identification	0.17**	0.17**	0.16**	0.16**	0.16**
	(.04)	(.04)	(.04)	(.04)	(.04)
Work Group Identification	0.07	0.07	0.06	0.06	0.06
	(.04)	(.04)	(.04)	(.04)	(.04)
LMX			0.12*	0.12*	0.14*
			(.06)	(.06)	(.06)
Friend Power		0.79		0.99	2.07
		(.79)		(.78)	(1.23)
LMX x Friend Power					1.85
					(1.64)
R^2	0.30	0.31	0.32	0.32	0.33
F	8.02**	7.32**	7.73**	7.20**	6.72**
change R^2	0.30	0.00	0.02	0.01	0.01
change F	8.02**	1.01	3.92*	1.60	1.27

*Significance: * = p< .05, ** = p< .01*

Table 24: Estimation of simplified model of Network Density in the Friendship Network on Commitment

Hierarchical Regression Simple Model - Friendship Network Density Dependent Variable = Commitment (All Respondents N=180)	Step 1	Step 2	Step 3	Step 4	Step 5
Organization Tenure	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Job Tenure	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leader Tenure	0.00	0.00	0.00	0.00	0.00
	(.01)	(.01)	(.01)	(.01)	(.01)
gender	-0.08	-0.10	-0.10	-0.13	-0.12
	(.12)	(.12)	(.12)	(.11)	(.12)
Hours per week	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ethnicity	0.04	0.03	0.04	0.03	0.03
	(.03)	(.03)	(.03)	(.03)	(.03)
age	0.00	0.01	-0.01	0.00	0.01
	(.05)	(.05)	(.05)	(.05)	(.05)
Organizational Identification	0.17**	0.18**	0.16**	0.17**	0.17**
	(.04)	(.04)	(.04)	(.04)	(.04)
Work Group Identification	0.07	0.07	0.06	0.06	0.06
	(.04)	(.04)	(.04)	(.04)	(.04)
LMX			0.12*	0.13*	0.12*
			(.06)	(.06)	(.06)
Density		0.45**		0.47**	0.47*
		(.14)		(.14)	(.14)
LMX x Density					0.06
					(.15)
R^2	0.30	0.34	0.32	0.36	0.36
F	8.02**	8.67**	7.73**	8.50**	7.77**
change R^2	0.032	0.041	0.02	0.044	0.001
change F	8.02**	10.43**	3.92*	11.37**	0.17

*Significance: * = p< .05, ** = p< .01*

Table 25: Estimation of simplified model of Network Centrality in the Friendship Network on Commitment

Hierarchical Regression Simple Model - Friendship Network Centrality Dependent Variable = Commitment (All Respondents N=180)					
	Step 1	Step 2	Step 3	Step 4	Step 5
Organization Tenure	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Job Tenure	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leader Tenure	0.00	0.00	0.00	0.00	0.00
	(.01)	(.01)	(.01)	(.01)	(.01)
gender	-0.08	-0.09	-0.10	-0.12	-0.12
	(.12)	(.12)	(.12)	(.12)	(.12)
Hours per week	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ethnicity	0.04	0.04	0.04	0.04	0.04
	(.03)	(.03)	(.03)	(.03)	(.03)
age	0.00	0.00	-0.01	0.00	0.00
	(.05)	(.05)	(.05)	(.05)	(.05)
Organizational Identification	0.17**	0.17	0.16**	0.17**	0.17**
	(.04)	(.04)	(.04)	(.04)	(.04)
Work Group Identification	0.07	0.06	0.06	0.05	0.05
		(.04)	(.04)	(.04)	(.04)
LMX			0.12*	0.12*	0.12*
			(.06)	(.06)	(.06)
Degree		0.02		0.02	0.02
		(.01)		(.01)	(.01)
LMX x Degree					-0.01
					(.01)
R^2	0.30	0.31	0.32	0.33	0.33
F	8.02**	7.41**	7.73**	7.22**	6.60**
change R^2	0.30	0.01	0.02	0.01	0.00
change F	8.02**	1.62	3.92*	1.72	0.20

*Significance: * = p< .05, ** = p< .01*

FIGURES

Figure 1: Hypothesis 1d

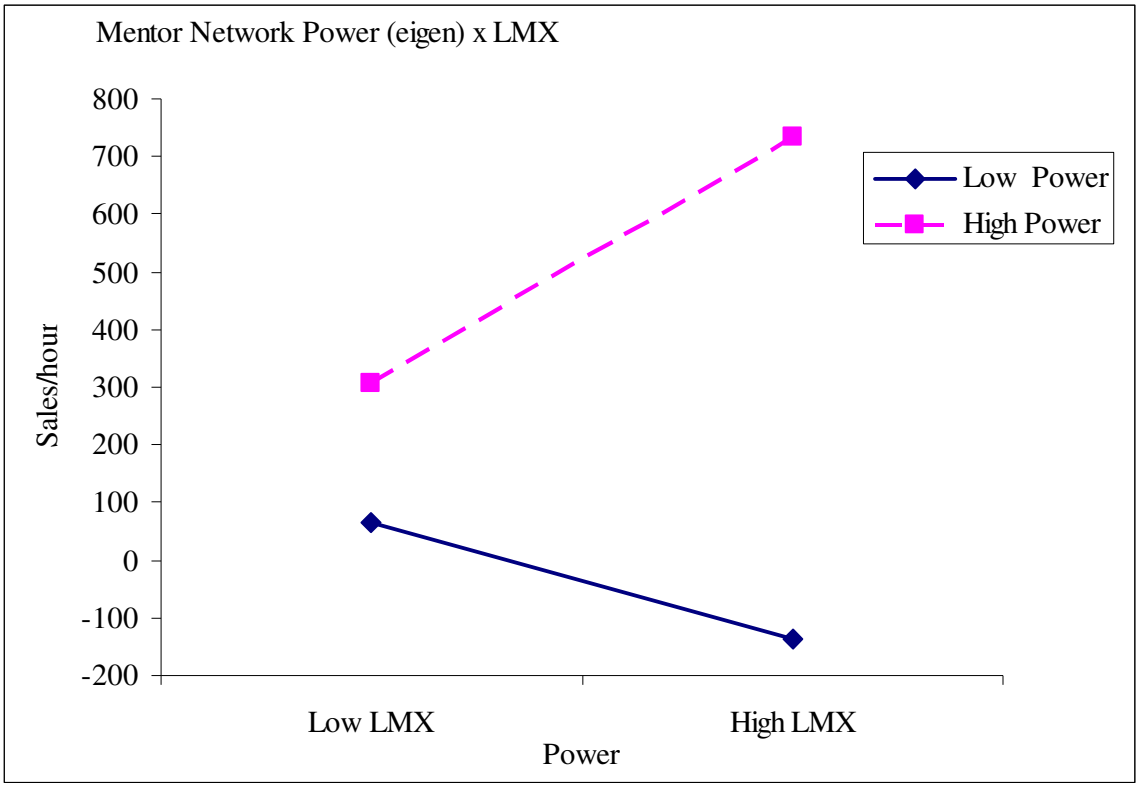


Figure 2: Hypothesis 1e

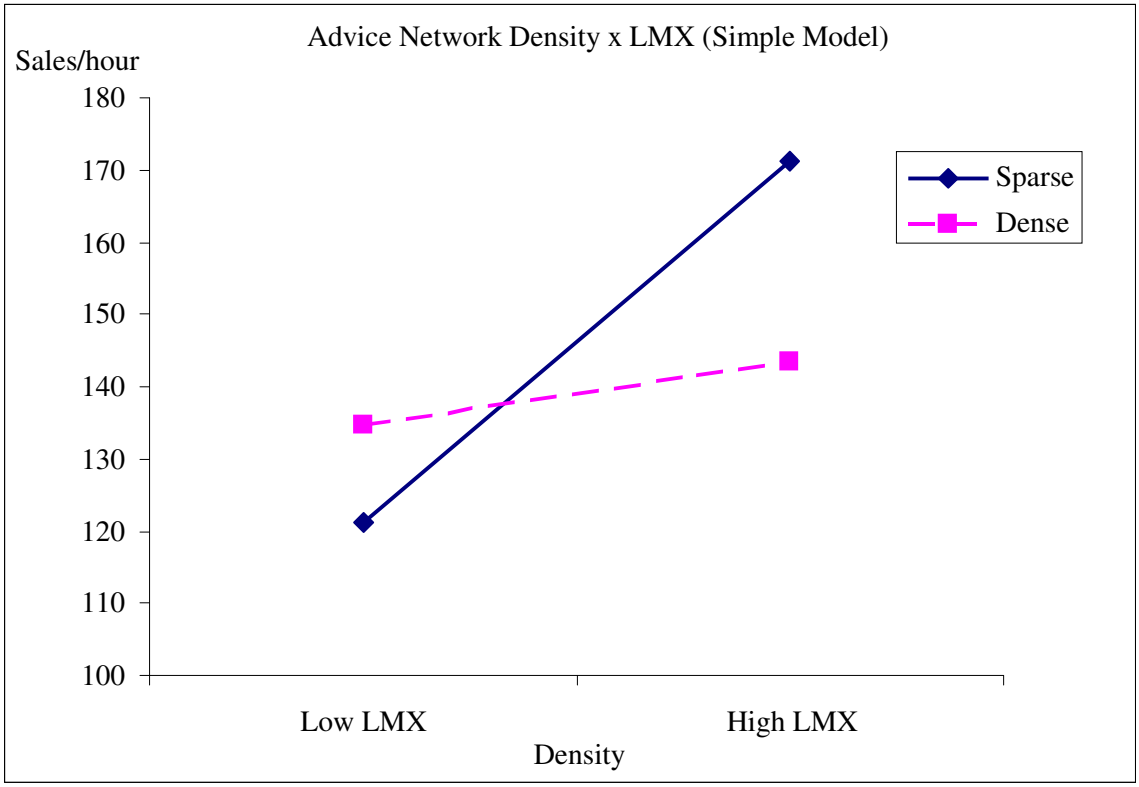


Figure 3: Hypothesis 1e

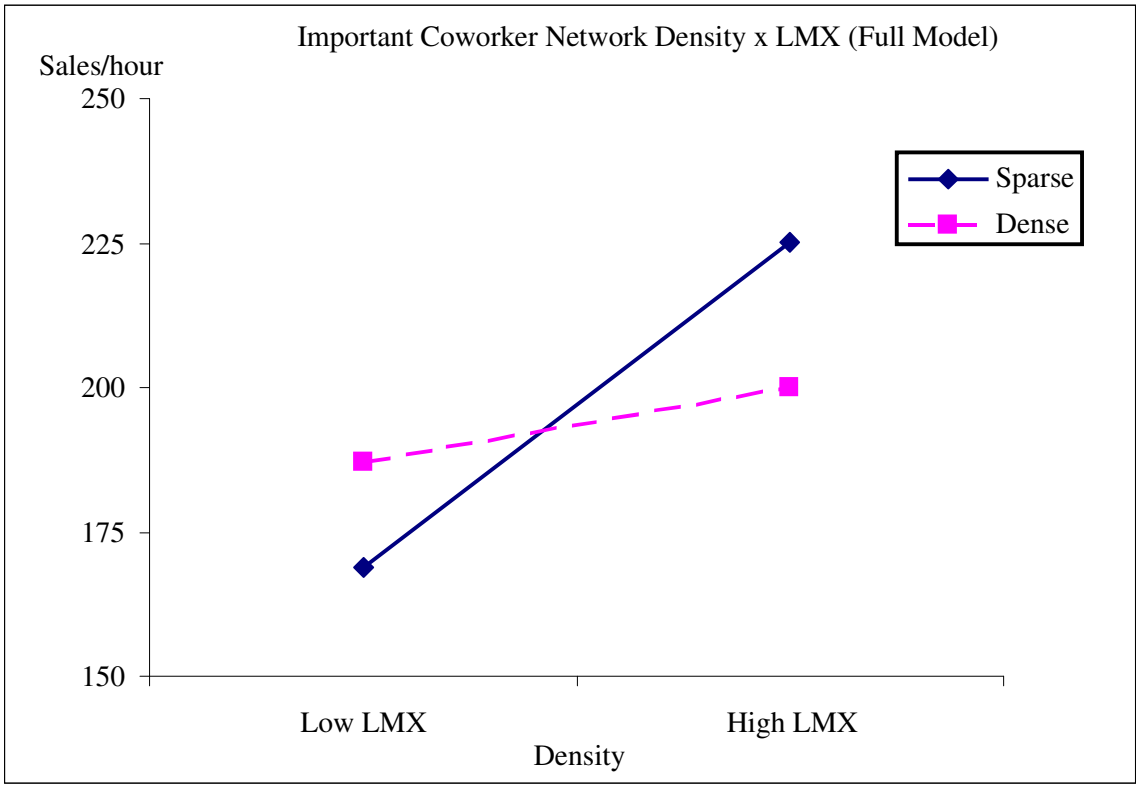


Figure 4: Hypothesis 1g and Hypothesis 1h

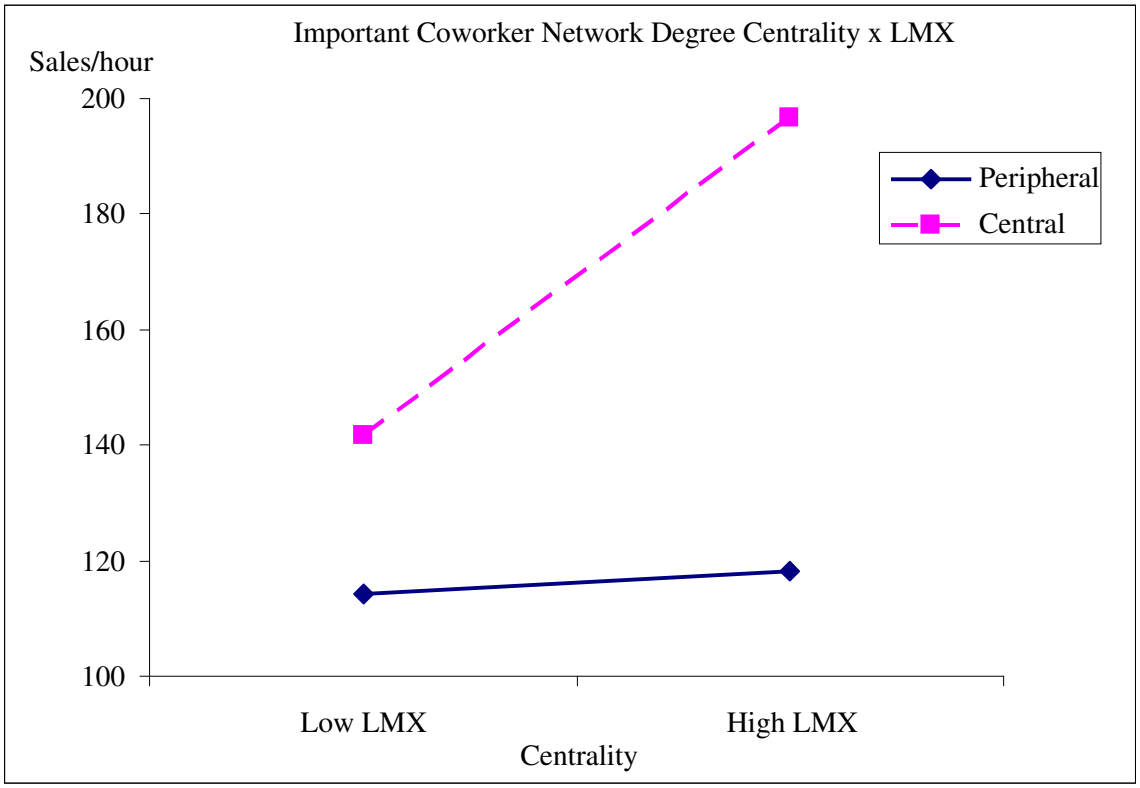


Figure 5: Hypothesis 1g and Hypothesis 1h

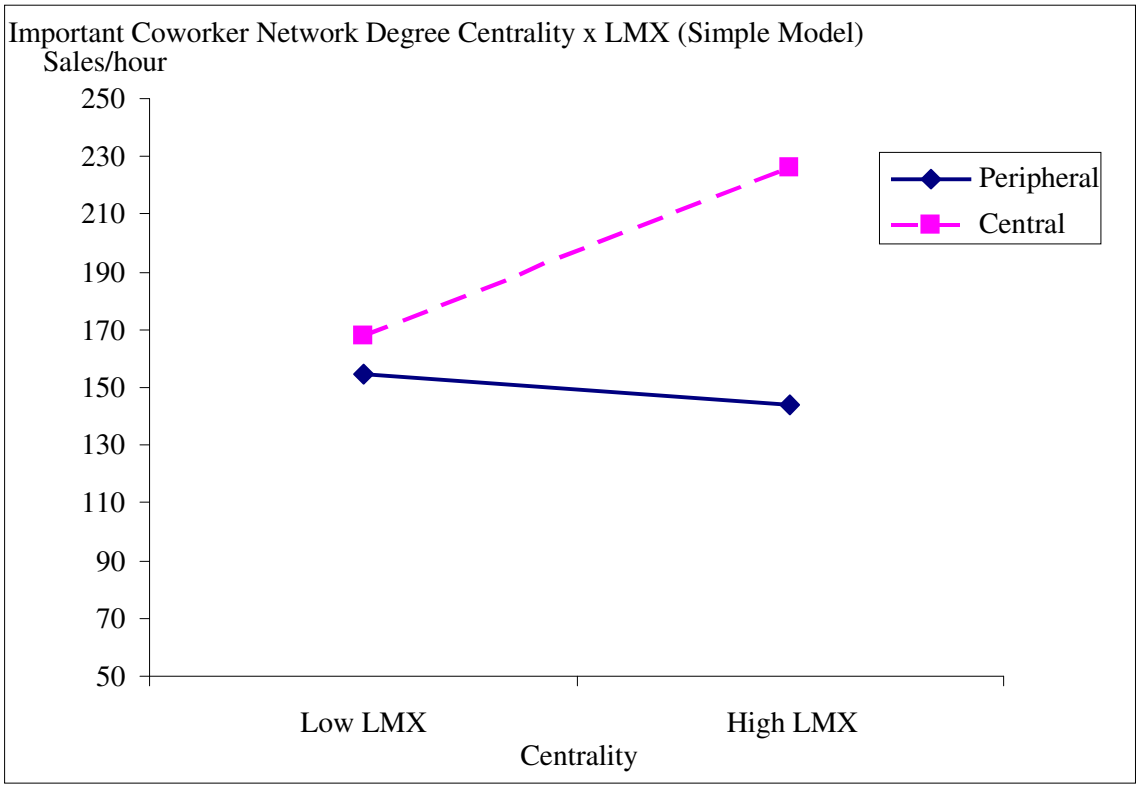
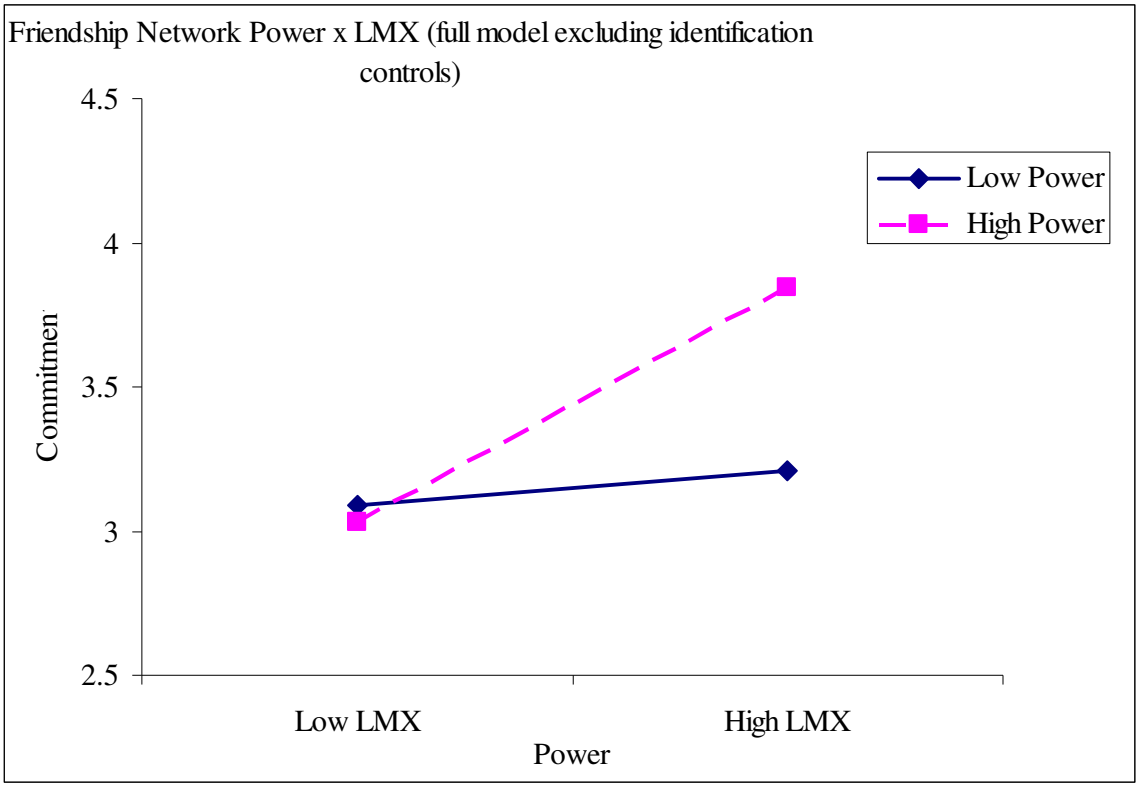


Figure 6: Hypothesis 2d



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